Table S1. Baseline characteristics of the training and internal validation sets.

Characteristic	Overall, N = 865	Training Set, N = 605	Internal Test Set, N = 260	P
Sex				0.236
Male	264 (30.5%)	192 (31.7%)	72 (27.7%)	
Female	601 (69.5%)	413 (68.3%)	188 (72.3%)	
Age(y)	72.0 (69.0, 76.0)	72.0 (69.0, 76.0)	72.0 (69.0, 77.0)	0.815
ASA Physical Status Classification				0.397
II	603 (69.7%)	427 (70.6%)	176 (67.7%)	
III	262 (30.3%)	178 (29.4%)	84 (32.3%)	
Height (cm)	160 (157, 167)	161 (157, 167)	160 (156, 167)	0.282
Weight (kg)	66 (60, 73)	67 (60, 75)	66 (60, 72)	0.512
Body Mass Index (kg/m²)	25.3 (23.0, 27.7)	25.4 (23.0, 27.8)	25.2 (23.2, 27.6)	0.802
Type of Surgery				0.087
Orthopedics	616 (71.2%)	424 (70.1%)	192 (73.8%)	
Gynecology	114 (13.2%)	76 (12.6%)	38 (14.6%)	
Urology	135 (15.6%)	105 (17.4%)	30 (11.5%)	
Fasting Duration (h)	13.10 (9.50, 15.52)	13.18 (9.50, 15.52)	13.03 (9.50, 15.52)	0.960
Preoperative Fluid Administration (mL)	138 (0, 440)	148 (0, 440)	129 (0, 440)	0.892
Dose of Bupivacaine (mg)	12.00 (10.50, 15.00)	12.00 (10.50, 15.00)	12.00 (10.50, 13.50)	0.282
Sensory Block Level	8.00 (8.00, 9.00)	8.00 (8.00, 9.00)	8.00 (8.00, 10.00)	0.156
Baseline Systolic Blood Pressure (mmHg)	144 (133, 157)	145 (134, 157)	143 (132, 155)	0.234
Baseline Diastolic Blood Pressure (mmHg)	75 ± 10	75 ± 10	76 ± 10	0.763
Baseline Mean Arterial Pressure (mmHg)	99 ± 10	99 ± 10	98 ± 10	0.700
Baseline Heart Rate (bpm)	74 (67, 82)	74 (66, 82)	74 (68, 82)	0.957
Post-Spinal Anesthesia Systolic Blood Pressure (mmHg)	113 (99, 128)	113 (100, 127)	113 (99, 129)	0.787
Post-Spinal Anesthesia Diastolic Blood Pressure (mmHg)	64 (56, 72)	64 (56, 72)	64 (56, 72)	0.673
Post-Spinal Anesthesia Mean Arterial Pressure (mmHg)	81 (73, 90)	81 (73, 90)	80 (72, 90)	0.835
Post-Spinal Anesthesia Heart Rate (bpm)	63 (56, 71)	63 (56, 72)	62 (56, 70)	0.513
History of Hypertension				0.817
Yes	451 (52.1%)	317 (52.4%)	134 (51.5%)	
No	414 (47.9%)	288 (47.6%)	126 (48.5%)	
History of Diabetes Mellitus				0.376
Yes	186 (21.5%)	135 (22.3%)	51 (19.6%)	
No	679 (78.5%)	470 (77.7%)	209 (80.4%)	
History of Coronary Artery Disease				0.263
Yes	117 (13.5%)	87 (14.4%)	30 (11.5%)	
No	748 (86.5%)	518 (85.6%)	230 (88.5%)	

Left Atrial Anterior–Posterior Diameter (cm)	3.60 (3.30, 3.90)	3.60 (3.30, 3.90)	3.60 (3.30, 4.00)	0.996
Interventricular Septum Thickness at End-Diastole (mm)	8.80 (8.00, 9.70)	8.80 (8.00, 9.70)	8.65 (8.00, 9.70)	0.513
Left Ventricular End-Diastolic Diameter (cm)	4.80 (4.50, 5.00)	4.80 (4.50, 5.10)	4.70 (4.50, 5.00)	0.245
Left Ventricular End-Systolic Diameter (cm)	2.90 (2.70, 3.20)	3.00 (2.70, 3.20)	2.90 (2.70, 3.20)	0.269
Left Ventricular Posterior Wall Thickness at End-Diastole (cm)	0.87 (0.80, 0.94)	0.87 (0.79, 0.94)	0.87 (0.80, 0.94)	0.906
Left Ventricular Mass (g)	142 (122, 163)	143 (121, 164)	139 (122, 159)	0.315
Left Ventricular Ejection Fraction (%)	68.0 (64.0, 71.7)	67.8 (63.8, 71.7)	68.5 (64.8, 72.0)	0.229
Left Ventricular End-Diastolic Volume (mL)	107 (92, 121)	107 (93, 122)	104 (91, 119)	0.263
Left Ventricular End-Systolic Volume (mL)	34 (27, 40)	34 (28, 40)	33 (26, 40)	0.212
Mitral Early Diastolic Peak Velocity (cm/s)	66 (56, 79)	66 (56, 79)	65 (55, 82)	0.734
Mitral Late Diastolic Peak Velocity (cm/s)	94 (84, 107)	94 (84, 107)	94 (84, 107)	0.833
E/A Ratio	0.69 (0.59, 0.81)	0.69 (0.60, 0.80)	0.68 (0.59, 0.82)	>0.999
Mitral Annular Early Diastolic Velocity (cm/s)	5.10 (4.18, 6.20)	5.10 (4.19, 6.20)	5.14 (4.10, 6.22)	0.869
E/e' Ratio	13.6 (10.9, 15.4)	13.4 (10.7, 15.4)	13.8 (11.1, 15.4)	0.531