

Supplementary Table 1: Comparison of perioperative surgical outcome data (before PSM)

	RSSI group (n=349)	MS group (n=434)	P-value
Operation time (min)	157.3 (68.6)	159.3 (29.3)	0.622
Cardiopulmonary bypass time (min)	70.9 (21.9)	68.9 (21.4)	0.209
Aortic cross-clamping time (min)	38.9 (13.1)	38.2 (22.8)	0.635
Intraoperative drainage volume (ml)	55.3 (23.0)	55.76 (17.2)	0.837
Postoperative drainage volume on the day of operation (ml)	111.1 (43.5)	124.4 (50.6)	<0.001
Duration of mechanical ventilation (h)	48.3 (40.2)	70.9 (67.5)	<0.001
ICU treatment time (min)	6.17 (4.73)	8.50 (5.10)	<0.001
Hospitalization time (min)	10.67 (6.23)	13.53 (7.29)	<0.001
Postoperative left heart size (mm)	22.67 (2.42)	22.51 (14.36)	0.824
Postoperative cardiac function status (%)	65.6 (7.0)	67.9 (6.6)	<0.001

VIS	8.37 (3.35)	7.82 (3.45)	0.031
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VIS: vasoactive inotropic score

Supplementary Table 2: Comparison of perioperative respiratory function (before PSM)

	RSSI group	MS group	
	(n=349)	(n=434)	P-value
PaO ₂ /FiO ₂ upon returning to ICU	321 (121)	330(119)	0.297
PaO ₂ /FiO ₂ before extubation	292 (121)	270(122)	0.012
PaCO ₂ upon returning to ICU (mmHg)	40.89 (9.26)	40.78(6.52)	0.852
PaCO ₂ before extubation (mmHg)	37.84 (4.67)	38.36(15.49)	0.518
Peak airway pressure upon returning to ICU (mmHg)	16.6 (2.1)	16.9 (2.3)	0.327
Peak airway pressure before extubation (mmHg)	16.2 (2.2)	16.0 (2.0)	0.13

Supplementary Table 3: Comparison of outcomes of perioperative efficacy and complication (before PSM)

	RSSI	MS	
	group	group	P-value
	(n=349)	(n=434)	
Residual ASD	0	0	N/A
Residual VSD	23	28	0.995
Death	0	4	0.241
Reoperation	2	1	0.836
Pericardial window for pericardial effusion	1	4	0.524
Poor wound healing and incision cleaning	1	6	0.225
Implantation of pacemaker	1	1	1

Supplementary Table 4: Long-term follow-up outcome (before PSM)

	RSSI group	MS group	P-value
	(n=291)	(n=376)	
Thoracic deformity	4 (1.4%)	25 (6.6%)	0.001
Respiratory tract susceptibility	7 (2.4%)	7 (1.9%)	0.627
Growth and developmental deviation	49	58	0.622