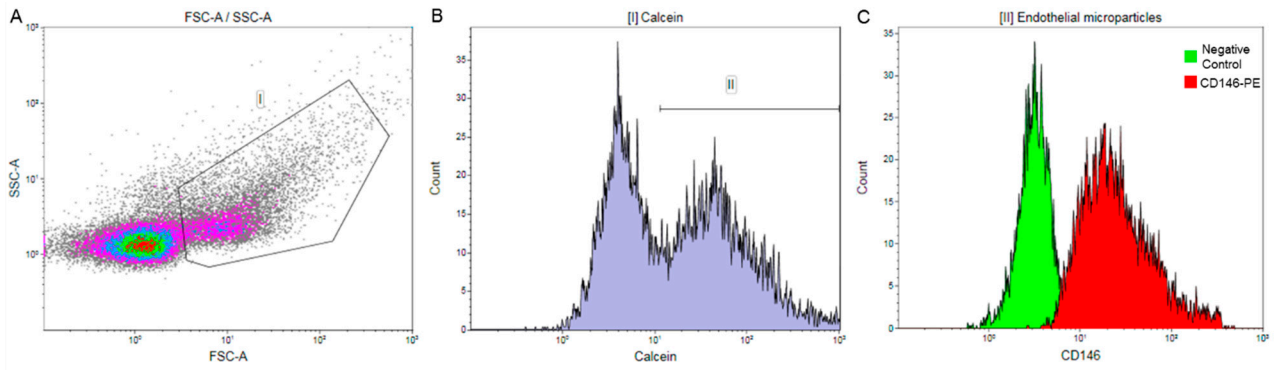


**Supplemental Figure S1. Flow cytometry workflow.**



(A) Representative image of the scatter plot (Y axis: side scatter; X axis: forward scatter), reporting all acquired events. (B) Representative histogram showing events gated from [I], identified using Megamix-SSC Plus beads, and stained with calcein AM to detect intact microparticles. (C) Representative overlay of intact microparticles [II] unstained (negative control - green) and stained with a specific marker for endothelial released microparticles (CD146 - red) conjugated with phycoerythrin (PE).

**Supplemental Table S1.** Surgical procedural characteristics and post-operative clinical data of patients that underwent mitral valve repair.

Variable	MVP (n = 45)
Cardiopulmonary bypass time, min	114.7 ± 39.7
Aorta clamping time, min	92.2 ± 37.7
24h post-surgery – creatine kinase-MB, ng/mL	48.6 ± 25
Intensive-care stay, days	1.3 ± 0.7
24h post-surgery – atrial fibrillation, n (%)	16 (35.6)
At discharge – atrial fibrillation, n (%)	0 (0)
Pacemaker implantation, n (%)	2 (4.4)

Continuous variables are represented as mean ± SD.

**Supplemental Table S2.** Circulating plasma levels of Arginine and Citrulline.

Variable	Control (n = 29)	MVP (n = 45)	
		Pre-operative	Post-operative (6 months)
Arginine (μM)	80.8 ± 16.1	76.6 ± 18.2	70.8 ± 14.4 *
Citrulline (μM)	27.8 ± 7.9	29.8 ± 9.4	28.4 ± 6.6

Data are reported as mean ± SD. \* p < 0.05 vs Controls-