

Supplementary Table 1. Predictors for left atrial thrombus or SEC

	Univariable		Multivariable Model 1		Multivariable Model 2		Multivariable Model 3	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
Demographic variables								
Age (yr)	1.02 (1.01–1.04)	0.005	1.00 (0.98–1.02)	0.870	1.02 (0.99–1.05)	0.161	1.02 (1.01–1.04)	0.004
Male sex	0.87 (0.64–1.17)	0.359	1.17 (0.84–1.64)	0.350	0.86 (0.57–1.29)	0.461		
Hypertension	1.33 (0.92–1.93)	0.133			1.08 (0.66–1.77)	0.758		
Diabetes	1.43 (1.04–1.97)	0.030			1.25 (0.80–1.94)	0.335	1.29 (0.92–1.80)	0.136
Dyslipidemia	0.89 (0.61–1.29)	0.530			0.77 (0.51–1.14)	0.193		
Old ischemic stroke	1.70 (1.15–2.52)	0.008			1.46 (0.75–2.84)	0.264	1.54 (1.02–2.32)	0.042
Congestive heart failure	2.73 (1.51–4.93)	0.001			2.44 (1.26–4.72)	0.008	2.49 (1.36–4.55)	0.003
Ischemic heart disease	1.30 (0.95–1.78)	0.099			1.21 (0.86–1.69)	0.272		
Current smoker	1.57 (1.00–2.46)	0.050			2.10 (1.27–3.48)	0.004	1.98 (1.22–3.19)	0.005
CHA ₂ DS ₂ -VASc score	1.23 (1.12–1.35)	<0.001			1.03 (0.78–1.34)	0.852		
Anticoagulation	1.66 (1.16–2.37)	0.006			1.41 (0.96–2.06)	0.082	1.42 (0.97–2.08)	0.070
Patent foramen ovale	0.59 (0.40–0.85)	0.006	0.61 (0.42–0.90)	0.012	0.65 (0.44–0.96)	0.029	0.65 (0.44–0.96)	0.028

Logistic regression analysis was performed to determine the association between PFO, and left atrial thrombus or SEC. Model 1 was adjusted for age, male sex, and CHA₂DS₂-VASc score. Model 2 was adjusted for Model 1 factors, along with hypertension, diabetes, dyslipidemia, old ischemic stroke, congestive heart failure, ischemic heart disease, current smoking, and anticoagulation. Model 3 was adjusted using a backward regression analysis. SEC, spontaneous echo contrast; OR, odds ratio; CI, confidence interval; CHA₂DS₂-VASc, congestive heart failure, hypertension, age ≥75 (doubled), diabetes mellitus, stroke (doubled), vascular disease, age 65 to 74, and sex category (female); PFO, patent foramen ovale.

Supplementary Table 2. Analysis of potential echocardiographic mediators of the effect of a patent foramen ovale on left atrial thrombus or spontaneous echo contrast

	Indirect association through mediator		
	Comparable coefficient (95% CI)	% Mediation	P for indirect effect
LAAV (cm/s)	-0.536 (-1.023 to -0.049)	91.08	0.031
LAVI (mL/m ²)	-0.189 (-0.521 to -0.064)	64.66	0.210
LVEF (%)	0.024 (-0.035 to 0.084)	24.65	0.418
E/E'	-0.007 (-0.215 to -0.035)	5.70	0.633

CI, confidence interval; LAAV, left atrial appendage emptying velocity; LAVI, left atrial volume index; LVEF, left ventricular ejection fraction; E/E', early diastolic mitral inflow velocity to early diastolic mitral annulus velocity.

Supplementary Table 3. Analysis of potential echocardiographic mediators of the effect of PFO on left atrial thrombus or spontaneous echo contrast according to PFO with and without high-risk features*

	Indirect association through mediators					
	PFO with high-risk features			PFO without high-risk features		
	Comparable coefficient (95% CI)	% Mediation	P for indirect effect	Comparable coefficient (95% CI)	% Mediation	P for indirect effect
LAAV (cm/s)	-0.636 (-1.003 to -0.269)	95.50	0.001	-0.292 (-0.939 to 0.354)	86.09	0.376
LAVI (mL/m ²)	-0.166 (-0.476 to 0.143)	60.55	0.291	-0.154 (-0.470 to 0.163)	68.06	0.341
LVEF (%)	-0.009 (-0.067 to 0.049)	7.01	0.765	0.031 (-0.028 to 0.091)	53.05	0.303
E/E'	-0.017 (-0.048 to 0.014)	12.90	0.282	0.001 (-0.028 to 0.028)	0.12	0.995

PFO, patent foramen ovale; CI, confidence interval; LAAV, left atrial appendage emptying velocity; LAVI, left atrial volume index; LVEF, left ventricular ejection fraction; E/E', early diastolic mitral inflow velocity to early diastolic mitral annulus velocity.

*High-risk features indicated the presence of either an atrial septal aneurysm or a large-shunt size.¹⁶