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Structural Heart Disease

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TCT-582

PFO Parameters in Patients with Oxygen Desaturation

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Background: Intracardiac shunting through a patent foramen ovale (PFO) is a rare etiology of oxygen desaturation. PFO morphology was evaluated as well as symptomatic improvement after PFO closure in patients with oxygen desaturation.

Methods: 231 patients were referred for percutaneous PFO closure from 2001 to 2006. There were 14 (6%) patients with significant arterial desaturation and a PFO. TEE was available in 8/14 patients. 12 patients underwent percutaneous PFO closure with either the CardioSeal or Amplatzer device. These measurements were compared to a group of 85 patients with PFO who presented with TIA or stroke.

Results: There were no significant differences in the PFO parameters of patients with arterial desaturation versus those who presented with neurologic events. Patients who had hypoxemia and PFO were older. There was a trend for wider PFO opening, and a higher grade of right-to-left shunting on bubble study in the hypoxemia group. 6/12 (50%) patients described symptomatic improvement and their oxygen saturation increased from 84 ± 1.2 to $93.8 \pm 3.5\%$. In patients without symptomatic improvement, the oxygen saturation increased from 85.5 ± 5.3 to $86.8 \pm 4.6\%$ ($p = 0.015$).

	Arterial desaturation (n = 8)	CVA/TIA (n = 85)	p-value
Age	63.4	49.6	0.02*
PFO width (mm)	3.6	2.8	0.4
PFO maximum length (mm)	10.9	12.0	0.6
PFO minimum length (mm)	6.06	7.6	0.3
Septum secundum width (mm)	9.8	9.2	0.6
Bubble grade	2.3	1.7	0.2

Conclusions: Percutaneous PFO closure provides an effective treatment with symptomatic improvement for half of the patients who have arterial desaturation and a PFO.