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Original Article

Patent Foramen Ovale in Young Adults with Cryptogenic Stroke or Transient Ischemic Attack

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Abstract:

Background: Stroke, one of the most important causes of morbidity and mortality in the world, is of great importance in young adults (15-45 years), amongst whom the causes of stroke and transient ischemic attack (TIA) are different from those in older ages and a significant portion of them have no known etiology. Patent foramen ovale (PFO) is considered a probable cause in this group.

Methods: Patients between 15 and 45 years of age with TIA or stroke were examined and evaluated for causes of cerebrovascular accidents. Patients with no definite cause for stroke or TIA, except for PFO, despite our extensive evaluations were categorized as cryptogenic. The controls were comprised of those between 15 and 45 years old who underwent transesophageal echocardiography (TEE) for reasons other than stroke. The frequency of PFO and its characteristics were compared between the two groups.

Results: The case group comprised 48 patients with cryptogenic stroke (n=31) and TIA (n=17), and the control group consisted of 57 patients. The age distribution of the groups was normal, and there was no significant difference between the age and gender of the two groups. The frequency of PFO in the case and control groups was 52% and 25%, respectively (p value=0.003, odds ratio=3.33, confidence interval=1.46-7.63). The exaggerated motion of the interatrial septum (IAS) in the case and control groups was 18.8% and 0%, respectively. Right-to-left shunt at rest in the case and control groups was 78% and 28%, respectively (significant differences). The differences in terms of PFO size, number of bubbles, and atrial septal aneurysm were not significant between the two groups.

Conclusion: PFO had a relation with stroke and TIA in the young adults, and right-to-left shunt at rest and exaggerated motion of the IAS could increase the possibility of paradoxical emboli. It seems that the presence of atrial septal aneurysm, number of bubbles, and PFO size did not increase the risk of cerebrovascular accidents.

Keywords:

Foramen ovale, patent . Stroke . Ischemic attack, transient . Echocardiography, transesophageal

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