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Incidence of atrial fibrillation after percutaneous closure of patent foramen ovale in patients presenting with cryptogenic stroke

Testa G., Gesuete V., Donti A., Formigari R., Sacchetti V., Montalti A., Balducci A., Fabi M., Bonvicini M., Picchio F.M.

Unit of Paediatric Cardiology and Cardiosurgery - S. Orsola Hospital. University of Bologna - Italy

Background: percutaneous closure of patent foramen ovale (PFO) has been emerging as an effective treatment of PFO, although several studies have reported atrial fibrillation (AF) as a not rare complication of this procedure. However the precise incidence of AF still remains to be determine in these patient population.

Objective: the aim of this work is to carefully assess the incidence of AF occurring after transcatheter PFO closure in the population of a single-center, observational, retrospective study.

Materials and methods: this study included 31 consecutive patient with device closure of a PFO after a documented stroke or transient ischemic attack. All patients underwent a telemonitoring event loop recording 1 months before and 1, 3 and 6 months after PFO closure. AF after the percutaneous closure was detected by 12-lead electrocardiogram (ECG) and by the analysis of all ECG- tracings sent by patients using the telemonitoring system.

Results: over a mean follow-up period of $8,7\pm 6,04$ months and a telemonitoring ECG-recording available to patients for an average of $83\pm 35,47$ days, AF after percutaneous closure was documented in only 1 (3,2%) patient. This patient had a large PFO (5-6 mm) associated with a large ASA, and a severe R-to-L shunt before the procedure, that disappeared after the percutaneous PFO closure.

Anyway, the same patient presented a history of previous palpitations and an episode of supraventricular tachyarrhythmia (atrioventricular nodal reentrant tachyarrhythmia), effectively treated with slow-pathway ablation 6 years before PFO closure. All the remaining 30 patients presented a normal sinus rhythm, without episodes of atrial arrhythmias.

Conclusion: AF has emerged as a complication of percutaneous device closure of PFO. Furthermore, its incidence in patients with cryptogenic stroke and PFO undergoing closure of the interatrial communication compared with patients suffering from stroke without a closure procedure seems to be similar. It also seems to occur more frequently in elderly patients with slightly enlarged left atria. We retain that long-term ECG monitoring may be useful to prevent recurrent events such us thrombus formation or cerebrovascular accidents.