Arrhythmia outcome in patients who are over 40 years of age after device closure of secundum atrial septal defect. A medium-term study.

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Introduction: It is recognized that surgical closure of secundum atrial septal defects (ASD) will improve symptoms but may have little positive effect on arrhythmia control. Many patients now have device closure as an alternative to surgery and the purpose of this study was to investigate arrhythmia status in a consecutive group of older adults after device closure.

Method: Retrospective of 142 patients (>40yrs old at time of device implantation) from a single centre (mean follow-up 2.8yr, range 1-5yrs). Patients were stratified to three groups based on arrhythmia status before the closure procedure: A (n=24), preexisting atrial arrhythmia (intermittent/persistent) with no invasive electrophysiology (EP) treatment; B (n = 12), documented atrial arrhythmia (intermittent/permanent) but who had at least one therapeutic EP procedure and C (n = 106), patients without arrhythmias. All patients had a clinical history, ECG and 14 patients had a 24-hour ECG carried out (mean follow-up 3.2yrs)

Results: The median age at time of ASD closure was 66.8yrs (group A), 56.9yrs (group B) and 51.8yrs (group C). There was a significant difference between A and C. The mean size (mm) of device were 26.5, 22.1 and 24.4, and the mean PA pressure (mmHg) were 29, 24.8 and 20.1 in group A, B and C respectively.

Arrhythmia persisted in 92% of Group A but 40% of Group B were in sinus rhythm and without antiarrhythmic medication after a mean follow-up of two years. Five percent of those with no previous arrhythmia developed clinical atrial arrhythmia (mean age 51.8yrs at onset of arrhythmias) requiring treatment and 3% remained in atrial fibrillation. The mean time to onset of arrhythmia was 2.5 months following device closure.

Conclusions: ASD device closure alone has little impact on arrhythmia outcome in those with documented atrial arrhythmias who are over 40. EP Intervention prior to ASD closure appear to play a role as about 40% of that group are on no antiarrhythmic medication on medium term follow up. The management of such patients remains a challenge but it appears that a proactive approach with regards to ablation procedures deserves prospective study. The fact that 5% of patients with no previous history develop arrhythmia also requires further investigation.