Persistently atypical atrial flutter after device closure of atrial septal defect in a young male – A rare case scenario

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Introduction: Atrial flutter (AFl) is uncommon in young patients with uncorrected atrial septal defect (ASD). Although rare, it has been reported in young patients following device closure of ASD/PFO. A case of persistent atypical atrial flutter following device closure of atrial septal defect, refractory to aggressive pharmacotherapy requiring electrical cardioversion is being presented here. Cardioversion was not done in initially due to risk of device embolization. After cardioversion patient remained in sinus rhythm with no recurrence of flutter.

Methods: A 28 year old, asymptomatic man was found to have an RBBB during a routine medical check-up. On further evaluation he was found to have a large ostium secundum ASD with dilated right sided chambers. His transesophageal echocardiographic (TEE) examination revealed the defect to be 27 mm in diameter with adequate surrounding rims for device closure. He underwent successful closure of his ASD with an Amplatzer Septal Occluder (32 mm). Three weeks following the closure, he complained of palpitations. His ECG showed atypical atrial flutter with 2:1 AV conduction and a ventricular rate of 150/min.

Result: He was admitted and administered heparin and I.V. amiodarone (1 gm over 24 hours), which reduced the ventricular rate but did not restore sinus rhythm. Subsequently, he was started on metoprolol succinate (50 mg BD) and dabigatran (150 mg BD). After 4 weeks, it was decided to give him a trial with flecainide which was started, initially 50 mg twice daily, and later increased to 100 mg twice daily. Over the next 2 months, while his pulse rate was within the normal range, the atrial flutter persisted. Hence flecainide was stopped and oral amiodarone was instituted. Two months later, he still complained of palpitations on effort; his ECG showed atrial flutter @ 300/min, varying AV conduction and a ventricular rate of 80/min (Figure 2). Given the adverse effects of amiodarone in the long term, it was decided to go back to the original regimen consisting of metoprolol succinate and dabigatran. During all this time, cardioversion was not used in view of the possibility of device embolization during the delivery of the shock.

Conclusion: After 6 months following the device closure since the flutter persisted, it was presumed to be safe to convert him electrically. He was subjected to TEE which confirmed the device to be in proper position (Figure 3a) without any thrombus over the device or in the LA appendage; there was no residual shunt (Figure 3b). He was subsequently cardioverted with 100J biphasic DC Shock and sinus rhythm was restored (Figure 4). Six weeks later, his antiarrhythmics and anticoagulant were discontinued. At 6 months following cardioversion, he continues to remain in sinus rhythm.