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Compare effectiveness of bio-prosthetic valve replacement and closure of atrial appendage among patients with mitral valve disease, atrial fibrillation and markedly-dilated left atrium during child-bearing period with traditional prosthetic valve surgery

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During child-bearing period, is it effective and reproducible to perform bio-prosthetic mitral valve replacement and occlude left atrial appendage? We suppose that this strategy will help remodeling of the atrium and allow later performance of Cox-Maze procedure. Also, type of valve and closure of the appendage, may eliminate the need for anticoagulation during pregnancy. Aim of this study is to compare effectiveness of this strategy with the traditional management of mitral valve disease, atrial fibrillation and markedly-dilated left atrium during child-bearing period. Two hundred-patients underwent mitral valve replacement between 2012 -2017, at Suez Canal University hospitals, Egypt. Pre-operatively, they had rheumatic mitral valve disease and atrial fibrillation Mean left atrial diameter was 71 ± 3.9 mm. The study group included 100 cases. Intra-operatively, each one had a bio-prosthetic valve replacement and continuous suturing of margins of mouth of the left appendage with 4/0 polypropylene suture. This step needed 4 ± 0.25 minutes to be conducted after incising the left atrium and examining the appendage. Postoperatively, they received anticoagulants for 90 days. The control group included 100 patients. They had prosthetic mitral valve replacement and indefinite anticoagulants. Five years of regular follow up included clinical examination every 3 months and trans-esophageal echocardiography every year. Among the study group: mean age of 27 ± 2.1 years. Atrial thrombi were removed from the appendages in 5 patients (5%). Postoperative thrombi or thrombo-emboli weren't reported. Mean left atrial diameter was $55 \pm .20$ mm. at the end of follow up. This allowed Cox-Maze procedures in 98% of cases. Two patients died. Among the control group: mean age 28 ± 1.02 years. Intra-operatively, thrombi in appendages were extracted in 4 patients (4%). Postoperative thrombi reported inside left appendages in 3 patients, additional two cases of thrombo-emboli were reported (P-value 0.0001). Mean left atrial diameter was $56 \pm .20$ mm at the end of follow up. We reported 12 abortions in 9 patients, peri-partum hemorrhages and retro-placental hematomas in 8%. Urgent Caesarian sections in 11% of deliveries. We conclude that bio-prosthetic mitral valve replacement and intra-operative suture closure of left appendage kept patients free of atrial thrombi and thrombo-emboli and allowed safer pregnancies. This approach is more effective and reproducible.