# SHORT, INTERMEDIATE AND LONG TERM FOLLOW UP OF DEVICE CLOSURE OF ATRIAL SEPTAL DEFECT (SECUNDUM) CASES: FIFTEEN YEARS EXPERIENCE WITH SPECIAL REFERENCE TO COMPLICATIONS

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## BACKGROUND

Device closure of Atrial Septal Defect (ASD) Secundum type is gaining popularity because of short learning curve, cosmetic benefits, reduced hospital stay, reduced working hour loss, reduced pain, less or no need for general anesthesia etc. In most centers this is the first choice of therapy comparing to surgical closure. The major concern recently is related to development of erosion and aortic regurgitation.

## OBJECTIVE

To evaluate the outcome of Device closure of Atrial Septal Defects Secundum type with complications encountered in our series and review of literatures.

## METHODS

Twelve hundred seventy five patients with secundum ASD with indication for closure, age 8 months to (median 9 years) 68 years from December 2000 to December 2015 were included in the study. Patient were followed up after device closure at 1, 3, 6, 9, 12, and 18 months and yearly thereafter with ECG, CXR, and Echocardiography. Two hundred and fifteen cases were lost from follow up after first year.

## RESULTS

Device was implanted on 1275 patient but tried on 1345 patient. Fifty eight cases postponed after balloon sizing and 12 cases for unstable position of device or mashrooming deformity of device. Female were 62.84% and male were 32.16%. Severe pulmonary hypertension was associated in 9.12% cases. Most commonly used device in this study was lifetech device ( 65%) Median flouroscopy time was 10 minute and procedure time was 25 minute. Transoesophageal echo guide was taken only in two cases, all other cases were performed with transthoracic echo guide. General anaesthesia was not given to any cases. Immediate complications were ST changes (n=15), transient arrhythmia (n=5), residual shunt (n=8) etc. Immediate major complication was embolization of device. (n=6). Device retreived in two cases and referred to surgeon later. Four cases were refd to surgeon immediately for retreival and surgical closure. One patient had pericardial effusion noticed on second day which was resolved spontaneously in one week. Another patient (26 yrs) with attempted device closure in adult catheterization laboratory by an adult cardiologist, had air embolism to right coronary artery and later developed ischemic cardiomyopathy. Later ASD was closed in pediatric catheterization laboratory but patient needed ICD (Implantable Cardiovertor defibrillator) for ventricular tachycardia after two months of device implantation. There was no late embolization, thromboembolic events, erosion, pericardial effusion, aortic regurgitation in follow up. Mean follow up time was 7.9 years (8 month to 15 years). Residual shunt was abolished in all patients other than those having another uncovered ASD (2 cases).

## CONCLUSION

Device closure of ASD using Amplatzer, Lifetech, Figulla, Cookon and some other Chinese devices are safe and effective in short, intermediate and long term follow up without any major late complication. No manufacturer related outcome difference noticed.