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**EARLY AND LATE OUTCOMES FOLLOWING ATRIAL SEPTAL
DEFECT DEVICE CLOSURE IN PATIENTS AT A TERTIARY CARE
CENTER**

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EARLY AND LATE OUTCOMES FOLLOWING ATRIAL SEPTAL DEFECT DEVICE CLOSURE IN PATIENTS AT A TERTIARY CARE CENTER

ABSTRACT

Background: Atrial septal defect is a congenital cardiac anomaly which results in blood flow between the upper chamber of the heart (atria). The defect can occur near the termination of SVC or CS and in the atrial septum. Transcatheter closure without any excessive blood loss and avoiding chest scar formation, with the improved surgical method, the procedural survival rate is approaching to 100%.

Objectives: The aim of the study was to assess and compare the early and late outcomes in different age groups according to the follow-up time. To compare the cardiac dimensional change, pulmonary artery pressure changes and presence of any device erosion or residual shunt among patients who underwent ASD device closure in different age groups using echocardiography and the ECG changes among patients who underwent ASD device closure in different age groups.

Methods: ASD patients who underwent ASD device closure between January 2011 to January 2021 were included in the present study. 64 patients who underwent ASD device closure with mean age of 32 ± 18 years MVD were finally enrolled in this study. Demographic data for each enrolled patient were obtained including Age, Height, Weight. Detailed history was taken for assessment of symptoms like dyspnea, chest pain, palpitation, cyanosis etc. A copy of 12 lead ECG recordings were obtained to look for RV volume overload changes including RVH, iRBBB, RAD, RAE etc. A detailed and complete echocardiographic examination was performed.

Results: Pre and post device closure clinical, ECG and echocardiographic data of patients were collected. Different echocardiographic methods were applied ranging from m-mode, 2-dimensional to TDI measures for both ventricles. As well as the analysis of left ventricular longitudinal, strain and strain rate, twisting and torsion using speckle tracking as well as right ventricular longitudinal strain and strain rate. Most of the ASD patients had normal ECG, with no significant changes. Disappearance of the ECG signs of increased RV pressure was observed after the device closure in most of the patients with almost normalization of ECG. After intervention almost all patients were asymptomatic. Only one patient had fatigue. In all other patients there was significant reduction in symptoms. Residual shunt was observed in 4 (6.2%) patients. Other complications such as device erosion was not observed in any of the patients after the ASD device closure. M-mode assessment showed significant increase in left ventricular internal dimension in diastole with p value of <0.001 . Volumetric assessment of End diastolic volume also increased after the ASD device closure with the P value of <0.001 . Volumetric analysis showed significant reduction in the RA volume and LA with the P value of <0.001 and 0.050 respectively. There was significant reduction in right ventricular systolic pressure in follow up patients after the ASD device closure with p value of <0.001 .

Conclusion: Our findings suggested that there was significant structural alteration after ASD device closure in all cardiac chambers. There was significant improvement in the symptomatic status post ASD device closure, suggesting overall symptomatic benefits among patients undergoing ASD device closure. ECG signs of RA/RV volume overload, crochetae sign were significantly resolved during the follow up period.