

# IS A YOUNGER AGE BETTER FOR REMODELING THE LEFT ATRIUM AND VENTRICLE WITH TRANSCATHETER ASD CLOSURE IN ADULT PATIENTS REGARDLESS OF DIASTOLIC DYSFUNCTION?

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## BACKGROUND

With the transcatheter device closure of secundum atrial septal defect (ASD), it is noticeable for the change of left atrium and left ventricle at longterm follow-up. The purpose of this study was to assess the remodeling of atrial and ventricular myocardium with the aspect of diastolic function in adult ASD patients.

## METHODS AND RESULTS

Thirty eight asymptomatic adult patients ( $48.6 \pm 17.1$  years, range 23-69 years), diagnosed with an ASD during health check-up, who underwent ASD device closure using Amplatzer Septal Occluder (ASO) were enrolled. The defect size was  $21.77 \pm 6.79$  mm, and balloon measurement was  $24.29 \pm 6.64$  mm. The medical records of these 38 patients were retrospectively reviewed and divided into two groups: I < 50 year old ( $33.06 \pm 9.43$ ), II  $\geq$  50 year old ( $62.55 \pm 7.54$ ). The echocardiographic data comparison between pre-closure and longterm follow-up showed significant differences at LVEDD ( $40.76 \pm 3.28$  vs  $43.39 \pm 3.52$ ,  $p < 0.001$ ), LV mass ( $99.64 \pm 28.81$  vs  $116.57 \pm 32.03$ ,  $p < 0.01$ ), and RV pressure ( $36.88 \pm 12.20$  vs  $31.81 \pm 11.11$ ,  $p = 0.04$ ). Then, at post-closure follow-up data, tissue Doppler measurements were significantly decreased and E/E' ( $8.79 \pm 3.19$  vs  $11.58 \pm 4.80$ ,  $p < 0.005$ ) was more elevated than pre-closure. Between the two groups, the data of mitral A, tissue Doppler E', A', S' were all decreased, and E/E' (pre :  $7.41 \pm 1.42$  vs  $9.60 \pm 5.15$ ,  $p < 0.003$ , post :  $10.49 \pm 3.95$  vs  $13.03 \pm 4.05$ ,  $p < 0.02$ ) was much higher at group II at both pre-closure and longterm follow up as well.

## CONCLUSION

After the transcatheter ASD closure, LA size and LV function presented a recognizable change for remodeling process. In the older group, it might be masked by the severe diastolic dysfunction. Relatively younger age might be better regarding remodeling to protect myocardial function after transcatheter closure of ASD. It may benefit to close ASD as early as possible in adults. Careful consideration should be provided for the previous underloaded left heart after late closure.

**Key words:** atrial septal defect, LA, LV, transcatheter device closure