Objective To evaluate clinical effects of transcatheter closure of giant ASD in adults.

Methods We selected 87 patients from June 2003 to November 2009 who underwent successfully transcatheter closure of adult giant Atrial Septal Defect (ASD diameter ≥30 mm) and were followed up over 1 year. All the patients were examined with TTE and ECG before closure and 3 days, 1 month, 6 months, 1 year after closure. Analyses were conducted using the statistical package SPSS version 13.0.

Results The average age of these patients was 31.5±12.1 years old, including 29 male patients and 58 female patients. The average defect diameter of all the patients was 33.8±1.85 mm, the average diameter of the occluder was 39.2±1.38 mm. The average diameter of the occluder was bigger 5.4±0.46 mm than the average defect diameter. First degree AVB was seen in 1 case after closure, second degree AVB was seen in 1 case after closure. Sinus bradycardia was seen in 1 case during procedure of closure, but it was reversed 5 min after Atropine injected, and did not recur subsequently. There was no significant difference between the pre-operative and post-operative electrocardiogram. The diameter of right atrium and ventricle significantly decreased in all patients, and recovered to the normal levels when 1 year after closure. Left ventricular end diastolic diameter is gradually increased, but still normal range. The reverse flow of atrioventricular valves significantly improved after closure. Of the 19 patients who had reverse flow of atrioventricular valves pre-operation, there was only 1 patient where there was a severe degree of reverse flow, and the rest patients had reduction of the severity of reverse flow. The pulmonary systolic pressure significantly decreased in 3 days, and had gradually become normal in the follow up of 1 year after Closure.

Conclusions Transcatheter closure of giant ASD was safe, and was associated with effective recovery of the cardiac structure.