Percutaneous closure of atrial septal defect in adults: short term cardiac remodeling and clinical outcomes

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Introduction
Few overseas studies have reported closure of an atrial septal defect in adults and elderly showed satisfactory results, with great reduction of symptoms and an improvement in functional capacity. In Tuen Mun Hospital, the intervention of percutaneous ASD closure to adults was commenced since 2005.

Objectives
To evaluate the short term outcomes of percutaneous closure of atrial septal defect in adults patients.

Methodology
Clinical follow up was conducted to 13 consecutive adults patients with ASDs who underwent percutaneous closure from 12/2011 to 12/2013 in TMH. Half yearly follow up on functional performance and quality of life was conducted and any adverse event was recorded. The echocardiographic examination, symptom-limited stair climbing, Hospital Anxiety and Depression Scale, and the Short Form (12) Health Survey were monitored in the patients before the procedure, and after 1 month and 6 months after the operation. Physical activity counseling was provided to all patients 1 month after operation by occupational therapist.

Result
During the review period, there were 13 patients, 2 male and 11 female patients. 12 patients attended all assessment sessions and their age range from 25 to 75 years, mean age of 49.25; and among them 4 patients with age over 60. The mean ASD diameter of the patients group is 1.9 cm. The atrial septal device was successfully
implanted in all patients. The procedure was uneventful and no complications. The average length of hospital stay was 31.18 hours. The echocardiographic findings after the procedure showed the mean right ventricular systolic pressure (RVSP) decreased after operation. Wilcoxon signed rank test was used to analyze the difference, and p-value was 0.002. Only one female patient reported subjective deterioration of exercise tolerance as she suffered from menorrhagia on dual antiplatelet agent and therefore significant anaemic symptoms. Friedman test was used to analyze the outcome measures of all the patients. The outcomes of functional capacity, mood status and quality of life were all improved. With the results of zero mortality and no incidence of complications, percutaneous ASD closure is a safe procedure for the adults and elderly patients. In addition, with the relatively short length of hospital stay and satisfactory outcomes after the operation, which further justifying this procedure.