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Transcatheter closure of secundum atrial septal defect associated with deficient rims other than the antero superior using Amplatzer devices.

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Introduction. We aimed to assess the feasibility of transcatheter closure for secundum ASDs with deficient rims (<5 mm), other than the antero-superior because it is well demonstrated that deficiency in the anterior rim toward the aorta does not influence the success rate for transcatheter ASD closure. **Method.** Between January 1st, 2008 and december 31, 2011, 192 patients underwent percutaneous closure of ASD in our institution under transesophageal echocardiography guidance in children and intracardiac echocardiography guidance in adults. Amplatzer devices (Amplatzer Septal Occluder or Cribriform) were used in 191 whereas one case without deficient rim was closed with intrasept ASD occluder. We retrospectively analyzed the outcomes of the 43 patients (22,4%, 26 children) with one or more deficient rim.

Results.The median age and weight was 16(1,1 to 85) years and 56(8,8 to 99)Kg, respectively. Deficiency of the inferior (toward the AV valves, n= 11), inferior- posterior (toward the inferior vena cava, n=15),or of the superior -posterior rim (toward the superior vena cava, n= 17) was confirmed by transesophageal echocardiography in all the cases. Transcatheter closure was successfully accomplished in 37 (86%) of the cases with a median ASO size of 28(10 to 40) mm. A modified method of implantation (sizing balloon technique)was used in 30 patients (70%).In 6 patients (5 children) the ASD could not be closed.Four other children experienced device embolization few hours after successful transcatheter closure and underwent surgical ASD closure without further complication. By Fisher's exact test, deficiency of the inferior-posterior rim was associated with failure or embolization($p = 0.0496$)and there was a trend for adult age to be associated with a low risk of embolization or failure ($p= 0,06$).

Conclusion. Transcatheter closure of secundum ASD is feasible in patients with deficient rims. However, this cannot be recommended because of an intolerable rate of embolization. Possibly, transcatheter closure of such secundum ASDs with deficient rims may be more successful in the adult population.