Introduction and Methods: Percutaneous closure has become the treatment of choice of Ostium Secundum Atrial Septal Defects (ASD) but follows variable selection criteria from one group to another. In August 2000, our group adopted the policy to systematically attempt percutaneous closure of all significant isolated ASDs presenting to our institution, irrespective of the anatomy of the defect (size and presence of sufficient rims) and size of the patient. This study evaluates retrospectively the safety and efficacy of this policy during the first ten years of its application, using the Amplatzer Septal Occluder (ASO) in a consecutive paediatric population from a single institution.

Results: A total of 322 patients were evaluated for ASD treatment at a mean age of 6.2 ± 4.2 years (range 0.3 - 18) and a mean weight of 23.5 ± 16.8 kg (range 5 - 135). Only one family elected surgical ASD closure upon advice from its treating cardiologist. Percutaneous ASD closure was systematically attempted and was successful in the remaining 321 patients. Mean procedure time was 121 ± 35 minutes (range 40 - 240) and mean fluoroscopy time 21.1 ± 9.8 minutes (range 6 - 66). Mean device size was 19 ± 6 mm (range 6 - 38). A small residual shunt was noted in 39 patients (12%) at 24 hours, and in 11 (3.4%) at final follow up of 33±25 months. Minor transitory complications occurred in 46 patients (14.3%), but no deaths or permanent sequelae from complications were related to the procedure, and no device had to be explanted.

Conclusion: In our experience, all anatomical variations of Ostium Secundum ASD can be effectively and safely treated with the ASO in paediatric patients. This report supports our policy of systematically attempting percutaneous closure in all patients, leaving failed procedures the only clear indication for surgical treatment.