

## MP1-7

### **Atrial septal defect closure (ASD and PFO) without fluoroscopy in both paediatric and adult patients – 19 years of experience**

*Schubert S., Nordmeyer J., Peters B., Kramer P., Berger F.,  
Department of Congenital Heart Disease/Pediatric Cardiology, German Heartcenter Berlin, Germany*

Introduction: Defects of the atrial septum are very common congenital heart disease; closure might be indicated and performed interventional with transcatheter devices implantation guided by fluoroscopy. One big disadvantage of transcatheter procedure is the x-ray exposition and contrast agent exposure of the patient and examiner. So the aim of this study was to clarify whether interventional closure of atrial septal defects is possible and safe when guided by transesophageal echocardiography (TEE) alone.

Methods: This is a retrospective single centre study of all paediatric and adult patients undergoing interventional atrial septal defect (ASD) or persistent foramen ovale (PFO) closure without fluoroscopy during 1999-2018.

Results: 758 / 2357 (37%) patients were included with interventional ASD or PFO closure with all complexity by transesophageal echocardiography (TEE) only. The rate of patients without fluoroscopy was low (8-32%) in the early decade (1999-2009) but has now increased to 40-90% of the patients in the last decade (2010-2018). Closure were performed with Amplatzer® Septal Occluder (ASO) for ASD II or PFO Occluder (APO), Gore Cardioform PFO occluder, Ceraflex-ASD and Figulla Flex ASD. Interventional procedure succeeded in 92% and initial (day of intervention) closure rate was 93.6%. 50% were patients < 18years. Complication rate and examination time was quite similar to the usual procedure with fluoroscopy. In only 49 / 2357 patients (2.1%) procedure was switched from TEE alone to fluoroscopy due to difficulties of controlling wire or device in the beginning decade.

Conclusion: Interventional closure of ASD is safe and effective in paediatric and adult patients without fluoroscopy and with transoesophageal echocardiography (TEE) alone. Therefore TEE guided closure of ASD and PFO should be considered in order to avoid unnecessary radiation exposure for all but especially for the paediatric patients.