

PERCUTANEOUS CLOSURE OF VENTRICULAR SEPTAL DEFECTS IN 92 PATIENTS: EARLY AND MIDTERM RESULTS

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BACKGROUND

In the last decade, percutaneous techniques to close cardiac defects have been developed. More recently percutaneous closure of ventricular septal defects have gained special interests. Initial experience in human appears encouraging but long term follow up data is needed.

OBJECTIVE

The aim of the study is to review our experience of percutaneous transcatheter closure of ventricular septal defect at the National Heart center in Oman.

METHOD AND RESULTS

Between November 2008 and January 2017, 92 (Male: Female, 35:57) patients underwent 94 procedures of transcatheter closure of ventricular septal defects. Mean age and weight at procedure were 6.8 ± 7.5 years and 22.6 ± 19.9 kilogram, respectively. The following anatomical types were present: perimembraneous 56(60%), high muscular 22(23%), mid muscular 6(6%), residual post surgery 7(7%), inlet 2(2%), and residual post device 1(1%). Different devices used including: Amplatzer ductal occluder 35(37%), Amplatzer ductal occluder II 22(23%), Amplatzer membranous VSD occluder 12(13%), Amplatzer muscular VSD occluder 12(13%), PFM coil 8 (9%), Cocoon PDA device 4 (4%) and Amplatzer septal occluder 1(1%). Percutaneous closure was successfully achieved on 92 (97%) procedures. No deaths occurred. Early major complications occurred in 4 patients (4%): device embolization in 2 (2%), One developed severe tricuspid valve regurgitation 1(1%) and the fourth patient developed severe tricuspid valve stenosis 1 (1%). Three patients required surgical retrieval of the devices 3(3%). Other complications are: hemolysis 1(1%), urinary bladder injury 1(1%), transient second degree atrioventricular block 2 (2%), transient junctional rhythm 1(1%), transient third degree heart block 1(1%) and vascular occlusion 1(1%). Follow up was possible in 64 (70%) patients with a median follow up of 13 months. None of the patients developed permanent complete heart block. Ten patients (16%) continued to have non-significant residual shunt (7 trivial, 3 mild). No patients developed severe tricuspid valve regurgitation or significant aortic valve regurgitation.

CONCLUSION

Transcatheter closure of ventricular septal defects can be done safely with few complications. Very careful selection of devices is mandatory. Percutaneous closure of ventricular septal defects is a valuable alternative to surgery. Long term follow-up is required to assess its safety and effectiveness.