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Recent experience and 12 years follow-up after surgical closure of atrial septal defect type II in 120 children

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Objectives: Catheter closure of secundum ASD is an effective treatment and compared favorably with surgical closure. The surgical approach is still mandatory for a significant number of patients.

Methods: This retrospective study included all 120 children (85 girls, 35 boys) operated for isolated ASD closure from 1999 until 2011 in our institution. Mean age was 4.6±0.7 yrs (4 months-16 years), mean weight 17±2kg (3.6-63 kg). Perioperative course, hospitalization, and late-follow-up were analyzed.

Results: Surgical closure was effective on the first attempt in 118 patients (98.3%). Mean time of extracorporeal circulation was 38±2 minutes; mean time aortic cross clamping 19±2 minutes. There was 4% direct suture and 96% patch closure, 84% of the patients operated by sternotomy and 16% by thoracotomy. ICU stay was 2.4±0.2 days (2-9 days), hospital stay 11.2±0.9 days (4-43 days). No complication was observed in 60/120 patients (50 %). Eight children (6.7%) presented major complications: 1 patient (0.8%) died from sepsis and respiratory infection, 2 (1.7%) needed a redo procedure for residual shunt, 3 (2.5%) underwent invasive treatment (2 pericardial drainage for tamponade, 1 resuscitation for cardiac arrest), 2 (1.6%) presented thromboembolic complications (1 cardiac thrombus, 1 cerebral embolism).
Fifty patients (42%) had mild in hospital complications: 33 (27%) pericardial effusion requiring medical treatment (non-steroid anti-inflammatory drugs n=25, steroids n=8, pericardiocentesis n=2), 15 (12.5 %) infections requiring treatment (respiratory n=9, gastroenteritis n=5, fever without clear origin n=3), 1 sternal instability, 4 anemia requiring transfusion, 7 (6%) pulmonary atelectasia, 2 post extubation laryngospasm (requiring steroids n=2, reintubation n=1). During follow-up after hospital discharge (mean 3.6±0.6 yrs, 2months-13yrs), there were 4 (3.3%) complications (2 respiratory infections, 1 wound infection, 1 fever without clear origin).

Conclusions: Our recent surgical experience of isolated ASD closure is similar to reports in the literature. Mortality is rare but not absent (0.8%). Major complications are rare (6.7 %) but more frequent than the 2 % complications after ASD transcatheter closure in 214 children in our institution during the same period (reported in AEPC 2013). Minor complications are frequent but did not result in sequela.