

Transcatheter Embolization Of Coronary Artery Fistulas in Pediatric Patients: Clinical, Angiographic Findings And Follow-Up Results Of A Single Center

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Introduction: Coronary artery fistulas (CAF) can be defined as a direct connection between a coronary artery and one of the cardiac chambers, large vessels or other vascular structures. CAFs have a 0.002% incidence among general population, 0.1% of coronary anomalies. Clinical presentation of CAF varies depending on size of fistula, age of patient, presence of myocardial ischemia. Most patients with CAF are asymptomatic during the first two decade, some children may present with murmur. Complications include 'steal' from the adjacent myocardium, thrombosis/embolism, heart failure, atrial fibrillation, rupture, endocarditis/endarteritis, arrhythmias. Therefore closure of CAFs are recommended even in asymptomatic patients. Methods: We retrospectively analyzed clinical, angiographic findings, follow-up results of CAF patients diagnosed between 2000-2016. Results: 26 patients had angiographic diagnosis of CAF, mean age: 6.5 ± 5.8 years (3 days-17 years), weight: 25 ± 21 kgs (3.5-67), male/female: 14/12. 13/26 patients presented with murmur, 10/26 were incidentally diagnosed during echocardiography, 3/26 presented with dyspnea. Associated cardiac anomalies were present in 3/26 patients. 24/26 patients had single, 2/26 had multiple CAF. Right and left coronary artery were involved in 8/26 and 18/26 patients, respectively. 13/26 patients had coronary-cameral, 7/26 had coronary artery-pulmonary artery, 4/26 had coronary artery-left atrium, 2/26 had coronary artery-right atrium fistula. CAFs were embolized in 14/26 patients, successful in 12/14 (86%) patients, partially successful in one, unsuccessful in one. Amplatzer Vascular Plugs were used in 6/14 patients, different coils used in 6/14 patients, Amplatzer Duct Occluder II Additional size device was used in one patient, glue (cyanoacrylate) was used in one. Mean procedure time: 112 ± 64 min (45-220), fluoroscopy time: 27 ± 16 min (8-60). No catheter related complications were observed. Surgery were performed in 3/26 patients (one for associated cardiac anomalies, two patients for unsuccessful embolization). 9/26 patients had clinical follow-up without intervention due to small fistula size. Mean follow-up period was 3.9 ± 3.7 years (1 month-14 years), two patients were lost to follow-up, No patients with intervention had recurrence of fistula. Patients who had clinical follow-up had no complications associated with fistula during the follow-up. Control angiography were performed in 4 patients after successful embolization, all had remodeling, regression of the size of the involved coronary artery. Conclusions: Transcatheter embolization of CAFs is an effective and safe procedure in pediatric patients. Follow-up is necessary for early diagnosis of recurrence of fistula.