

Aortopulmonary collaterals in neonates with d-transposition of the great arteries (d-TGA) – clinical significance after arterial switch operation

*Navarini S., Balmer Ch., Hug M., Dave H., Prêtre R., Kretschmar O., Knirsch W.
Division of Pediatric Cardiology, University Children's Hospital, Zurich, Switzerland*

Objective In patients with d-TGA enlarged bronchial arteries or major aortopulmonary collateral arteries (MAPCA) are common. Although clinically silent, the cardiac volume overload after surgical repair can lead to longer mechanical ventilation, inotropic use and longer hospital stay. In addition, copious flow returning from these vessels to the left atrium can impair the view on the surgical field during cardiopulmonary bypass surgery. **Methods** We performed a 4-year retrospective monocentric study analyzing early clinical data in patients after arterial switch operation with MAPCAs complicating the postoperative course. **Results** In our institution 44 arterial switch operations were performed from 01.01.2007 to 31.12.2010. Postoperatively 17 (39%) patients needed a cardiac catheterisation due to known anomaly of the coronary arteries, pathologic signs for ischemia in ECG, or prolonged postoperative course. 10 of these 17 patients (59%) had one or more MAPCAs, and 8 required transcatheter coil embolization. There was no significant difference in gender and age. Catheterisation in patients with a hemodynamically relevant MAPCA was done between 7-53(mean 18) days after switch operation without any major complications. Postoperative mean intubation time was 9.5 days, catecholamine use 9 days, and ICU stay 15 days. Overall hospital stay in patients with MAPCA coiling after arterial switch operation was 26(mean, range 15-81)days. One patient with a hydrocephalus internus requiring a ventriculo-peritoneal shunt after cerebral hemorrhagia stayed in hospital for 81 days. In all 8 patients cardiac catheterisation resulted in complete MAPCA closure, but one patient required an additional operation for stenosis of the left coronary artery. **Conclusions** Hemodynamic relevant MAPCAs are quite common in patients after surgical repair of d-TGA. They can be large enough to cause pulmonary volume overload with the consequence of prolonged and complicated postoperative course. Therefore, when facing this situation, an early postoperative work-up in the cathlab should be considered.