

Early postoperative cardiac catheterization in patients with functionally univentricular hearts.

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Introduction: Patients with univentricular hearts undergo palliative operations that require complex surgical techniques. Cardiac catheterization (CC) may be useful, in the early postoperative period, to clarify and manage residual lesions, however there have been concerns about its safety.

Methods: We retrospectively analyzed all consecutive patients with functionally univentricular hearts who underwent CC in the immediate post-operative period, between 2005 and 2016.

Results: Over 11 years, 118 patients underwent 166 CC in the first 30 days after a surgery. 62 patients (53%) were male, the median age was 1.5 ± 4.6 years (min 0.01, max 31.6) and CC was performed on average 9.8 ± 7.8 days (min 1, max 29) after surgery. 98 CC (59%) were diagnostic and 68 (41%) interventional. During the 68 interventional CC a total of 87 interventions were performed, 54 (62%) of which on a recent surgical anastomosis. One, two and three similar or distinct procedures, were performed on 50 (73.5%), 17 (25%) and 1 (1.5%) interventional CC respectively.

There were 14 intraprocedural complications, 4 (29%) classified as minor, 6 (43%) as moderate, 3 (21%) as major and 1 (7%) as catastrophic. There was no association between the incidence of CC complications and the presence of mechanical ventilation, inotropic support, ECMO, open chest, type of CC performed (diagnostic versus interventional) ($p=0.198$), or intervention on a recent surgical anastomosis versus intervention elsewhere ($p=0.151$).

Twenty eight surgical reinterventions were performed on average 1.9 ± 1.8 days (min 0.5; max 7) after a CC: 20 (71%) after a diagnostic CC and 8 (29%) after an interventional CC.

Sixteen patients (14%) died in the first 30 days after a CHS. Those that underwent an interventional CC had a better survival than those who underwent only a diagnostic study ($p=0.015$). No difference was noticed between the patients who had an intervention on a recent surgical anastomosis and those who had an intervention elsewhere ($p=0.178$).

Conclusions: Early postoperative CC is a safe procedure in the treatment of patients with functionally univentricular hearts. It not only allows an attempted diagnosis of residual lesions and a timely surgical repair, but also the management of some abnormalities percutaneously.