

Operative outcomes and indication of surgery for primary cardiac tumor in children

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Objectives: To investigate indications and outcomes of surgically managed cardiac tumors in children.

Methods and results: 43 consecutive patients aged <18years, were retrospectively analyzed from January 1995 to December 2015 in two cardiac centers. The diagnosis was prenatal in 19 patients (44%). For the remaining patients, median age at diagnostic was 89days (0days to 14.9 years). Histologic examination of the tumors showed rhabdomyoma in 16 patients, teratoma in 8, fibroma in 6, myxoma in 6, Inflammatory myofibroblastic tumor in 4, hemangioma in 1, lipoma in 1 and fibrosarcoma in 1. 37 patients had surgical resection of the tumor: 27 complete (73%) and 10 partial resection (27%). Reason for partial resection was infiltration of the tumor in the myocardium in 4 patients, in a cardiac valve in 3, in a coronary artery in 2 and in the sinus node in 1. 16/37 patients had additional procedures during surgery. The 6 remaining patients had conservative surgery without resection (2 implantable pace-maker or defibrillator, 1 Blalock-Taussig shunt, 2 pericardial windows, 1 mitral valvuloplasty). Achievement of preoperative goal regarding primary indication for surgery was 76% for patients with hemodynamic compromise (22/29): intracardiac obstruction in 16/19, pericardial effusion with tamponade in 4/5, valve impairment in 2/4 and left ventricular dysfunction in 0/1; and 80% for patients with rhythm or conduction disorder (4/5). Other indications of resection were systemic embolization of the tumor with stroke in one patient, respiratory distress due to bronchial compression in one and prophylactic surgery in 7. Conservative surgery and partial resection were not associated with lower rate of achievement of preoperative goal. Major post-operative adverse events occurred in 6 patients (14%) with 4 patients needing early re-intervention and 2 deaths (4.7%) before discharge. We did not find any clinical or surgical predictive factor of freedom from post-operative death or major adverse event.

Conclusion: Surgical management of cardiac tumor in children is indicated in 80% of the cases for hemodynamic or rhythmic disorders and provides good operative results. Total resection of the tumor is not the only way to achieve therapeutic aim and conservative surgery should be considered when necessary.