Abstract:

Early survival after the Norwood I procedure has improved over the years, but subsequent morbidity is not yet well assessed. The aim of this study was to review the incidence of recoarctation, evaluate risk factors, and analyze treatment options. We reviewed the medical records of 124 consecutive patients with hypoplastic left heart syndrome (HLHS) who underwent the Norwood I procedure. Reconstruction of the aortic arch was performed in a standardized manner, removing all visible ductal tissue and enlarging the distal anastomosis with a Y incision into the descending aorta. Angiographic assessment with measurement of the peak gradient across the aortic arch was performed before the second stage was performed. Recoarctation of the aorta was documented in 13 patients (13.4%) at a mean time of 6.4 ± 5 months after the Norwood procedure. One patient died before the recoarctation could be treated. Right ventricular function was good in all except 1 patient at the time of diagnosis. Ten patients underwent 16 percutaneous balloon angioplasties, and 2 patients underwent operative enlargement of the neoaorta. The pretreatment peak gradient of 24.1 ± 16 mm Hg (10-64 mm Hg) across the aortic arch was significantly reduced to 6.3 ± 4 mm Hg (0-14 mm Hg) after angioplasty or operation (p = 0.003). There were no procedure-related
deaths. No risk factor for recoarctation could be identified. A standardized surgical technique for reconstruction of the aorta leads to a low recoarctation rate. Balloon angioplasty can be performed in the majority of patients before the second-stage procedure.

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