INFANTS WITH COARCTATION OF THE AORTA ± HYPOPLASTIC AORTIC ARCH: MEDIAN OR LATERAL APPROACH?


LA PAZ HOSPITAL. MADRID. SPAIN

OBJECTIVES: Surgical approach of infants with Coarctation (CoA) ± Hypoplastic aortic arch is a challenge. Choosing between Sternotomy or Thoracotomy is associated respectively with the need of extracorporeal circulation or not. We present our surgical results and follow-up.

MATERIAL & METHODS: Retrospective analysis of 40 infants (age <1 year) with biventricular heart and surgical reconstruction of aortic arch during the period 2004–2015. Sternotomy in 45 and Thoracotomy in 45. In Sternotomy group we use selective cerebral perfusion instead of circulatory arrest in order to eliminate the cerebral injury associated to the arrest. Cerebral monitorization is performed with invasive radial artery pressure and near-infra-red spectroscopy. Statistical study was done with SPSS-16.0

RESULTS:

- Some preoperative characteristics are different: Sternotomy group in comparison with Thoracotomy group has
  - more associated cardiopathy (76 vs 26%)
  - more hypoplastic arch (73 vs 22%)
  - more dependence of intravenous prostaglandin (76 vs 43%)
  - and more complexity in RACHIS-I score. (5± 0.3 vs 1.8 ± 0.44)

- Surgical Techniques: Sternotomy patients received termino-lateral anastomosis (78%), Thoracotomy patients received terminal-terminal anastomosis (60%).

- Hospital mortality: 9% in Sternotomy and 7% in Thoracotomy group (pns).

- Hospital morbidity analysis

- Mean follow up is 26 ± 21 months (Max. 81 months).
  - Two patient died in the follow-up (Thoracotomy group).

- Late re-coarctation is more frequent in Thoracotomy (22%) than in Sternotomy (12%) (p=0.08).

- Late re-coarctation is generally treated with percutaneous angioplasty in both groups.

- We reoperated 12% patients of the Sternotomy group and 15% of Thoracotomy group (pns).

CONCLUSIONS:

- The use of selective cerebral perfusion in median sternotomy approach for arch surgery, lets the surgeon do the anastomosis in a bloodless field and preserves neurological function.

- Sternotomy in comparison with Thoracotomy has similar mortality, worse Hospital morbidity (recurrent nerve lesion, prolonged stay), but better patency of the arch anastomosis in the follow-up (low incidence of late re-coarctation).

- We recommend median sternotomy with selective cerebral perfusion if there is hypoplastic aortic arch and/or associated cardiopathy needing surgery.