

Repair of an aorto-right ventricular tunnel in a newborn

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Supplemental material:

Description of the surgical procedure

The procedure was performed through a median sternotomy under hypothermic (at 26°C) cardiopulmonary bypass using bicaval cannulation and left ventricle venting (see video 2). After cross-clamping the ascending aorta distally, a transverse aortotomy above the sinotubular junction was performed and the crystalloid cardioplegia was administered directly into the right and left coronary ostia. The aortic valve and root component were inspected. The aortic cusps had a normal structure and configuration. The left aortic sinus was dilated; the right and left coronary orifices were in the usual location. The entrance of the tunnel was found in the bottom of the left aortic sinus as a 3.5 mm wide opening. A coronary guide was introduced through the opening to identify the communication to the right ventricle. The tunnel did not have any additional connections. We performed the closure of the entrance of the tunnel in the left aortic sinus, with an autologous pericardial patch using a 7-0 Prolene running suture (see video 3). Once the tunnel closure was performed, the aortic valve was inspected carefully and its function was not affected. The aorta was reanastomosed. In addition, the persistent ductus arteriosus was closed and a very small persistent foramen ovale was left open. Weaning from bypass was possible without any difficulties and no changes in the electrocardiogram were encountered (see video 4).

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