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Surgical correction of anomalous origin of aortic right pulmonary artery

Correção cirúrgica da origem anômala da artéria pulmonar direita da aorta

Ulisses Alexandre CROTI[1], Domingo Marcolino BRAILE[1], Marcos Aurélio Barbosa de OLIVEIRA[1], Carlos Henrique DE MARCHI[1]

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CHARACTERIZATION OF THE PATIENT

Female children aged 20 days, 2.9 kg, with dyspnea at rest since birth.

The electrocardiogram showed significant right ventricular overload, chest X-ray revealed increased cardiac area and echocardiography established the diagnosis of right pulmonary artery (RPA) arising from the left side of the ascending aorta at 5.8 mm of the aortic valve, with the origin measuring 5 mm and the distal portion 7 mm. There was also *ostium secundum* atrial septal defect of 1.8 mm, moderate tricuspid valve insufficiency and significant pulmonary hypertension. The multi-detector computed tomography confirmed the echocardiographic findings.

The surgery consisted of total section of the ascending aorta, leaving a flap of tissue from this aorta for direct anastomosis of the origin of the RPA in the right wall of the pulmonary trunk.

The aorta was repaired with direct anastomosis between the proximal and distal portions. All anastomoses were performed using polydioxanone yarn aiming at enabling the growth of tissues.

The cardiopulmonary bypass (CPB) time was 90 minutes and myocardial ischemia 27 minutes at a minimum temperature of 26ºC.

DESCRIPTION OF THE TECHNIQUE

Median sternotomy, settlement of sterile fields to protect the wound.

Opening of the mediastinum, partial resection of the thymus, pericardial fixation. Analysis of external cardiac structures, initiation of the RPA dissection with identification of the exact position of the origin of the aorta. RPA isolation and ligation using tourniquet.

Confection of purses in the aorta and right atrial

THE VIDEO PERTINENT TO THE TEXT IS PUBLISHED ON THE JOURNAL WEBSITE: http://www.rbccv.org.br

1. São José do Rio Preto Pediatric Cardiovascular Surgery Service - Hospital de Base - São José do Rio Preto Medical School, SP, Brazil.

Correspondence address: Ulisses Alexandre Croti
Hospital de Base – Faculdade de Medicina de São José do Rio Preto (FAMERP) – Avenida Brigadeiro Faria Lima, 5544 – São José do Rio Preto – SP – Brasil – CEP 15090-000.

Phone (Fax): 17 – 97726560 / 3201 5025
E-mail: uacroti@uol.com.br

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appendage, right atrial heparinization and purse in the inferior vena cava.

Demonstration of Braile Biomédica's aortic arterial cannula no. 8 used in the operation. Positioning of it in the aorta as distal as possible and fixing.

Strangulation of the RPA and immediate initiation of cardiopulmonary bypass (CPB).

Dissection of the left pulmonary artery, identification of the ductus arteriosus, ligation using 5-0 polypropylene yarn, ligation and section.

Isolation of the pulmonary trunk, identification of suitable site for the right wall incision and implantation of the RPA. It is noted with blood flow completely stopped by tourniquet.

Clamping of the ascending aorta, administration of cardioplegia.

Total section of the aorta by removing the RPA origin with enough tissue for adequate anastomosis in the pulmonary trunk.

RPA wide dissection up to the pulmonary hilum, incision in the right wall of the pulmonary trunk with removal of tissue to obtain large orifice.

Direct anastomosis between the RPA and the pulmonary trunk using 6-0 polydioxanone yarn. Analysis of the position of the pulmonary branches after implantation.

Reconstruction of the aorta with direct anastomosis and absorbable sutures, being enlarged the distal portion using longitudinal incision. Aortic declamping, initiation of the heartbeat and discontinuation of CPB.

The operation is finished in the usual way, noting the protection afforded by the sterile fields, closure of the sternum with steel wires and layer suture of the tissues.