Letter to the Editor

Gore-Tex 'new-innominate vein' for complicated bilateral cavopulmonary shunts

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We read with interest the case report "A Gore-Tex 'new-innominate vein': a surgical option for complicated bilateral cavopulmonary shunts" by Vida et al. [1]. We congratulate the authors for their innovative strategy in tiding over a troublesome situation following the bilateral cavopulmonary shunt (BCPS). However, certain reservations can be expressed over the initial management strategy planned for this patient. In the initial stage alone, considering a right pulmonary artery of only 3 mm size for a 14-month-old child (weight not specified), a left-sided systemic to pulmonary artery shunt would have provided an adequate initial palliation and considering that the pulmonary arteries were confluent, it would have probably led to the growth of the right pulmonary artery [2]. Previous experience has shown adequate growth of the pulmonary arteries after a systemic to pulmonary artery shunt [2], whereas their growth following a cavopulmonary shunt procedure is only a probability, particularly if the pulmonary arteries are not adequate in size [3–5]. Although the systemic to pulmonary artery shunt would have resulted in the volume overload of the systemic ventricle, the subsequent growth of the pulmonary arteries would probably have been better and avoided the unfortunate situation encountered by the authors. The risk of occlusion of the prosthetic graft when used as a systemic to pulmonary artery shunt would also have been less than its risk of occlusion between the two cavae, which the authors were forced to perform. Considering that the child was 14 months old, he could have then returned in the ensuing year for the BCPS with a more favourable pulmonary artery anatomy.

References


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Reply to Talwar et al.

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Our experience with modified Blalock–Taussig shunts into very small pulmonary artery branches has not been good. The shunts can cause distortion, kinking, etc., and they do not always allow for increases in pulmonary artery size. Also, since we were envisioning a future ‘Fontan-type’ repair, the right pulmonary artery was extremely important to preserve, as well as the protection of the pulmonary arteries from pulmonary vascular obstructive disease.

The wisdom of this strategy was proven by the increase in size of the right pulmonary artery after the goretex interposition [1] from 3 mm to 6 mm (Z-value of the right pulmonary artery from −3.8 to −0.5) by 10 months. Excellent flow was also achieved from the right superior vena cava via the enlarged right pulmonary artery to the right lung. The risk of thrombosis of a systemic-to-pulmonary artery shunt is certainly lower than that of a vascular graft interposed in venous position, but it is still reported to be high (up to 20%) at intermediate follow-up [2,3]. Continued postoperative oral anticoagulation with coumadin preserved the patency of the goretex prosthesis allowing the growth of the right pulmonary artery branch.

References


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