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# The large right-sided patent arterial duct: its implications for construction of systemic-to-pulmonary anastomoses

Subramanian Jothi Murugan, Sandeep Agarwala, Nihal A. Weerasena

*Department of Congenital Heart Disease and Cardiothoracic Surgery, Leeds General Infirmary, Leeds, United Kingdom*

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A CYANOTIC NEONATE WITH A DUCT-DEPENDENT circulation was diagnosed as having tetralogy of Fallot with pulmonary atresia. Angiography demonstrated the combination of a right-sided aortic arch with mirror image branching, a right-sided descending thoracic aorta, and a large right-sided patent arterial duct (Fig. 1: the arrow indicates the right-sided duct). The pulmonary arteries were small but confluent. We constructed a left-sided modified Blalock-Taussig shunt through a median sternotomy, ligating the patent duct without needing to use cardiopulmonary bypass. The view at operation is shown in Figure 2, where Ao indicates the ascending aorta, RPA the right pulmonary artery, and PDA the patent duct.

Although it is not ideal to construct a systemic-to-pulmonary shunt so that it feeds the pulmonary artery to which the arterial duct also attaches, it would have been possible in our patient to use a right thoracotomy and place a right-sided modified Blalock-Taussig shunt to the right pulmonary artery, creating the pulmonary anastomosis distal to the site of insertion of the arterial duct. We chose not to use this approach, since we anticipated that the presence of the large arterial duct might produce major technical difficulties. We could also have used a left thoracotomy to place our chosen left-sided shunt, but this would have created technical difficulties in ligating the right-sided duct.[1] We chose, therefore, to carry out the operative procedures through a median sternotomy.

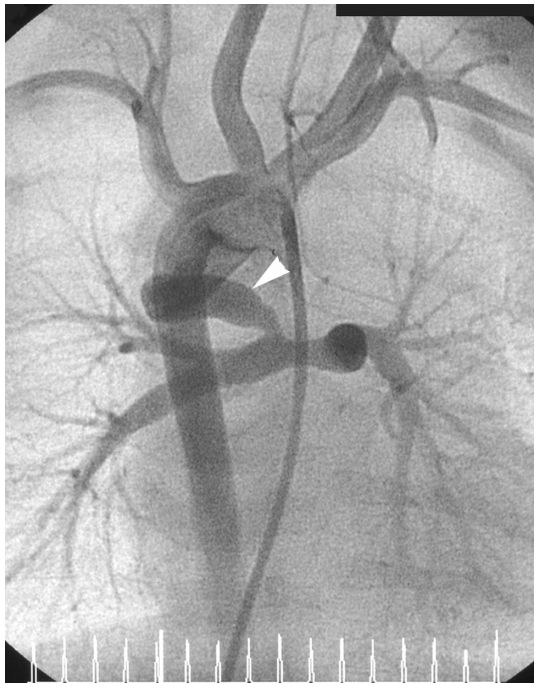

**Figure 1.**

It is not our routine approach to ligate a patent arterial duct when constructing a systemic-to-pulmonary shunt. We deemed it advisable in this particular patient because of the large size of the patent duct, since we hoped to avoid excessive flow of blood to the lungs. The midline approach would also have permitted rapid institution of cardiopulmonary

Correspondence to: Dr Subramanian Jothi Murugan, E Floor, Jubilee Building, Leeds General Infirmary, Great George Street, Leeds LS1 3EX, UK. Tel: +44 113 3925407; Fax: +44 113 3928474; E-mail: jothidevi1@hotmail.com

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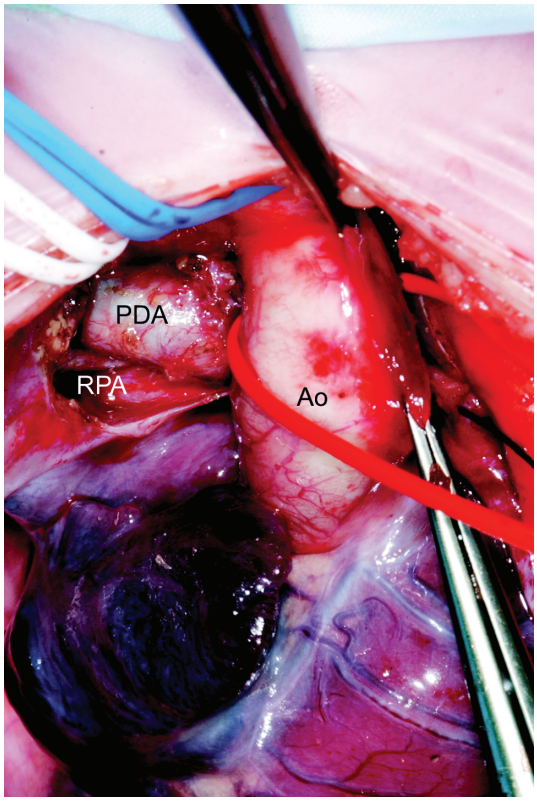


**Figure 2.**

bypass had there been any intraoperative haemodynamic instability.

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## Reference

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