

The arterial duct and the right aortic arch: telescope into the prenatal defective heart

James Ker^{1,2,*}

¹Department of Internal Medicine, University of Pretoria, Pretoria, South Africa

²Avocet 2, Hazeldean Office Park, Silver Lakes Road, Pretoria, South Africa

*Correspondence to James Ker. Email: jker@wol.co.za

Progress in the understanding, diagnosis and treatment of congenital cardiovascular anomalies began when dr Helen Taussig founded the pediatric cardiology clinic at the Johns Hopkins Hospital in Baltimore in 1930 and the very first surgical procedure was the ligation of a patent ductus arteriosus by dr Robert Gross at the Children's Hospital in Boston in 1938 [1]. Since then an explosion of imaging innovations have kept pace with numerous surgical and percutaneous interventions in the treatment of congenital cardiovascular diseases [1].

Fetal cardiac imaging emerged in 1980 when Kleinman, Allen and Sahn [2] published their series of two-dimensional echocardiography in the assessment of fetal hearts. The past 40 years has brought significant technological advances in imaging of the fetal cardiovascular system—color Doppler, 3D-and later 4D-echocardiography [2].

The arterial duct is an important structure in the field of congenital cardiovascular disease, not only because a patent ductus arteriosus is a common congenital cardiovascular anomaly, but also because it is a target of intervention in other congenital cardiovascular anomalies, such as the need for stenting of the arterial duct in cases of duct-dependent circulation [3]. In this issue of the Journal Chiappa et al. [4] focus on the role of the arterial duct in congenital cardiovascular disease by analysis of the morphology of the arterial duct in cases of congenital right aortic arch. It is clear from their study that the prenatal assessment of the morphology of the arterial duct can give valuable information of associated congenital cardiac anomalies. This study adds valuable impetus to the ever growing field of fetal cardiology.

References

1. Kiess M (2016) History and evolution of the treatment of adult congenital heart disease. *BC Med J* 58(7):368–372
2. Arya B (2021) Fetal cardiac imaging for congenital heart disease—is cardiac magnetic resonance imaging the future? *JAMA Netw Open* 4(3):e214617
3. Peters B, Ewert P, Berger F (2009) The role of stents in the treatment of congenital heart disease: Current status and future perspectives. *Ann Pediatr Cardiol* 2(1):3–23
4. Chiappa E, Ridolfi C, Cordisco A (2021) The multiform sonographic spectrum of arterial duct in right aortic arch. *Int J Cardiovasc Imaging* 8:1