Antenatal diagnosis of isolated, single left superior vena cava and its association with coarctation of the aorta: a retrospective review over a 15-year period

Greg Leonard[1] and Beverly Tsai-Goodman[2]

[1]Imperial College London Faculty of Medicine
[2]Royal Brompton Hospital

May 13, 2022

Abstract

To assess the association between single, isolated left SVC and coarctation of the aorta. Retrospective review Fetal cardiac centre in London, split across two sites. 24001 fetal cardiac scans performed between April 2005 and March 2020, of which 24 fetuses were found to have isolated single left SVC. Retrospective analysis of clinical reports and outcome data were examined from routinely captured clinical data; this data was compared to gestation-matched references. Presence of aortic arch hypoplasia and/or coarctation of the aorta. 289 fetuses were identified with left SVC, of those 24 (8.3%) had single left SVC with agenesis of the right SVC. 95.8% (23/24) were identified after the introduction of the 3VV to the fetal anomaly screening programme in 2010 of which 58.35 (14/24) were diagnoses after the addition of the 3VT in 2015. All fetuses were successfully delivered without any postnatal complications. None were found to have aortic arch hypoplasia or coarctation of the aorta. Single LSVC does not appear to be associated with CoA and can be considered a benign congenital anomaly. Changes in streaming of flow across the patent foramen ovale, thus maintaining adequate perfusion of the aortic isthmus in fetal life, may be the reasons for not developing coarctation of the aorta. Furthermore, frequency of antenatal scans can be minimized, and postnatal management adjusted accordingly as single LSVC in the absence of right SVC does not appear to result in development of coarctation of the aorta, neither antenatally nor after birth.

Hosted file

`LSVC BJOG FINAL.docx` available at https://authorea.com/users/482501/articles/569026-antenatal-diagnosis-of-isolated-single-left-superior-vena-cava-and-its-association-with-coarctation-of-the-aorta-a-retrospective-review-over-a-15-year-period