For this method, the calculation of Auto FS used the following formula: Auto FS (%) = (diastolic dimension – systolic dimension)/ diastolic dimension × 100. The values measured between the ventricular septum and at right side are defined as R-Auto FS. That at left side is L-Auto FS. And the value between both ventricular walls was defined as Combined-Auto FS. About recipients of TTTS we evaluated the tendency by Z score. The equipment was Arietta70 or 850 (Hitachi). This study was approved by the ethics committee of our facility and was performed upon obtaining the written informed consent of the subject mother.

Results: The data was obtained from 578 of normal fetuses and 9 of TTTS. In normal fetus all Auto FS decreased significantly with gestational age (Spearman correlation analysis R-Auto FS: p = -0.427 L-Auto FS: p = -0.258, Combined Auto FS: p = -0.469 respectively). In recipients of TTTS, the mean of Z score were R-Auto FS: -0.88, L-Auto FS:2.46, Combined-Auto FS: -1.64.

Conclusions: We consider Auto FS can evaluate fetal cardiac function clinically. In recipient twins R-Auto FS and Combined-Auto FS decreases. We considered these decreased FS might reflect the deterioration of the cardiac function of recipients of TTTS.

VP18.12
Fetal pulmonary artery sling: prenatal diagnosis and outcome

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Objectives: To summarise the characteristics of fetal pulmonary artery sling (PAS), evaluate the clinical outcome of these pregnancies.

Methods: This is a retrospective study on a cohort of fetuses diagnosed with pulmonary artery sling (PAS), 16 cases of fetal PSA by fetal chocardiography were collected from January 2016 to Novermber 2019. The echocardiographic features, imaging and genetic testing information and prognosis were summarised.

Results: Among the 16 cases, 7 cases fetuses were simple PAS deformity without any other malformations. 8 cases were complicated by other intracardiac malformations, including 3 cases of persistent left superior vena cava (PLSVC), 2 cases of right pulmonary artery unilateral hypoplasia (UHPA), 1 case of ventricular septal defect (VSD), 1 case of right aortic arch with aberrant left subclavian artery and 1 case of hypoplastic right heart syndrome; 1 case by extracardiac malformations. 4 pregnant women underwent non-invasive DNA, all of which were at low risk, 9 cases underwent amniocentesis, 2 cases underwent genome sequencing, no obvious abnormality was found. 13 fetuses were born and confirmed from the results of postnatal echocardiography, 1 case was diagnosed as neonatal pneumonia and respiratory failure at another hospital and died within three weeks after birth. The remaining 12 cases were followed up for 6 times on average, all of them received surgery up to one year old with normal growth and development; 2 fetuses were induced labour; 1 fetus was lost to follow-up. CT vascular reconstruction was performed in 10 fetuses after birth.

Conclusions: The abnormal left pulmonary artery originates from the right pulmonary artery,surrounding behind the trachea on pulmonary artery branches view. It is the characteristic prenatal ultrosund manifestation of the fetal PAS. In our study, fetal PAS is more likely to be complicated by persistent left superior vena cava (PLSVC) as well as right pulmonary artery dysplasia. The prognosis of PAS without severe ectopic and extracardial malformations may be good, but further studies are needed.

VP18.13
Postnatal outcome of prenatally diagnosed isolated right aortic arch with concomitant right ductal arch: systematic review

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Objectives: Right aortic arch with concomitant right ductal arch (RAA/RDA) is a rare congenital heart defect (CHD) for which risks of associated chromosomal defects, cardiac or extracardiac malformations and abnormal postnatal outcome are not clearly defined. The aim of our study was to quantify such risks in a prenatally diagnosed group with this diagnosis.

Methods: Systematic review of the literature was performed using the following key words: congenital heart defects, right aortic arch, right ductal arch, prenatal diagnosis. We collected case series and case reports of prenatally diagnosed RAA/RDA in English language. Pediatric surgical series and, duplicate publications were excluded. Frequency of associated defects, aneuploidies, fetal growth restriction (FGR), IUD, TOP, neonatal deaths (NND) and respiratory problems were recorded.

Results: 18 papers reporting on 60 cases of prenatal ultrasound diagnosis of RAA/RDA were included in the analysis. 60% of cases were diagnosed before 22 weeks (range 11–32). Livebirth occurred in 51/52 (98.1%); TOP in 1/52 (1.9%), FGR in 3/51 (5.9%) no IUD or NND. Associated conotruncal CHD were present in 18/60 (30%): TOF 3 (5%); ALSA 3 (5%), DORV 2 (3.3%); PA abnormalities 5 (8.3 %); TGA 2 (3.3%), truncus 1 (1.6%), LPSVC 1, PA/VSD 1. Extracardiac defects were reported in 3/53 of cases (5.6%) (cleft palate; dolichocephaly, persistent right umbilical vein), 22q11 microdeletion in 3/49 (6,1%; of which 2 thymic aplasia), no other aneuploidies and respiratory symptoms in 3 (5%) cases (one with ALSA and vascular ring and two with bronchial compression or abnormality). Cardiac surgery was performed only in one case with bilateral DA.

Conclusions: RAA/RDA presents 30% of associated conotruncal CHDs and 6% risks of 22q11 microdeletion. Risks of other associated problems or surgery is rather low, therefore in isolated cases we recommend reassurance, particularly when thymus and karyotype are normal. However, there is a lack of data concerning long-term postnatal outcome and treatment.

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Right aortic arch and right ductus arteriosus without intracardiac anomalies: contrasting aspects of a rare variant

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Objectives: 3 vessel and trachea view (3V + T) is increasing prenatal diagnosis of the right aortic arch (RAA). In RAA, the characteristics of the ductus arteriosus (DA) and of associated congenital heart diseases (CHD) allow to predict postnatal clinical picture. In