Methods: HeBee has been designed from real babies heart examinations and from echographic findings of normal fetal hearts. Its size that approximates those of an orange has been enlarged to be practical to hold with hand, but proportions have been respected to look like a fetal heart.

Results: HeBee is a 3D fetal heart model that allows understanding of global cardiac anatomy and the most useful echographic views. It is composed by pieces that join together and reproduce the 4-chamber view, the 3-vessel view, the left outflow tract and the great vessel view.

Conclusions: Conception of congenital heart diseases models like ventricular septal defects, tetralogy of Fallot, atrioventricular septal defects are also in progress. www.hebee.fr.

Supporting information can be found in the online version of this abstract

P09.10

Prevalence of aneuploidy and invasive prenatal diagnosis in pregnancies complicated by hypoplastic left and right ventricle

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Objectives: We sought to assess the prevalence of aneuploidy in fetuses with major cardiac lesions, and to compare the prevalence in fetuses with hypoplastic left ventricle (HLV) and hypoplastic right ventricle (HRV). We also compared the prevalence in those with isolated congenital heart disease (ICHD) to those with extracardiac malformations (ECM), and assessed which group was more likely to undergo invasive prenatal diagnosis (IPD).

Methods: This is a retrospective cohort study of patients in whom fetal HLV or HRV was diagnosed at time of prenatal ultrasound. Cases were ascertained from a fetal ultrasound database from 2003-2012 at a tertiary referral center for congenital heart disease. Review of the ultrasound database and maternal and neonatal charts allowed identification of extracardiac malformations and genetic abnormalities. The groups were compared using basic inferential statistics.

Results: There were 299 patients for whom we had information on testing for fetal aneuploidy. In our study population, 51.8% underwent IPD: 42.3% of those with isolated cardiac malformations, 66.0% of those with one ECM, and 77.1% of those with more than one ECM. Those with any ECM were significantly more likely to have invasive genetic testing than those with ICHD (RR 1.69; CI 1.38,2.07). Of the 214 patients who underwent prenatal or neonatal genetic testing, those with one or more ECM were significantly more likely to have a genetic abnormality identified than those with ICHD (35.3% versus 9.30%, p <0.0001). There was no difference in prevalence or type of aneuploidy between the HLV and HRV groups.

Conclusions: Women with pregnancies complicated by major left or right heart malformations were more likely to undergo invasive testing if their fetus had extracardiac malformations than if there was isolated congenital heart disease. Aneuploidy was more often found when one or more extracardiac malformation was present, however the 9.3% association of genetic abnormality with ICHD underscores the importance of offering testing to both groups.

P09.11

Tetralogy of Fallot prenatal ultrasound and autopsy correlations

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Objectives: To describe the ultrasonographic markers in the diagnosis of tetralogy of Fallot (TOF) in the fetus, and to evaluate its correlations with classic autopsy aspects.

Methods: The prospective 3-year study assessed 4721 pregnant women undergoing fetal cardiac screening, from 12 to 26 weeks' gestation, in the Prenatal Diagnostic Unit. We performed standard echocardiographic planes (color Doppler assessment) and in selected cases evaluation of the arches, in the axial upper mediastinum views. The autopsy photographic files were correlated with the video ultrasonographic files.

Results: Congenital heart diseases (CHDs) were diagnosed in a total of 49 (10.37%0) fetuses, of a median gestational age of 17 (range, 12-26) weeks. Five of the 49 (10.2% of all CHDs) had TOF, of which 3 cases had classical TOF (pulmonary stenosis), one had Fallot with pulmonary atresia and right-sided aortic arch. The question-mark sign was observed in 3 of 5 cases, the overriding aorta and an abnormal 3 vessels and trachea view was present in all cases. The classic autopsy confirmed both cases terminated in the second trimester.

Conclusions: The results underline recent changes in the gestational age (GA) at the diagnostic of TOF. Unlike the GA when classic autopsy is able to assist the postmortem diagnosis (that remained over 16 WA), the GA when CHDs became accessible to US examination has decreased. This fact leads to difficulties in the autopsy confirmation process in early CHDs suspicion.

Supporting information can be found in the online version of this abstract

P09.12

Anacrotic notch in the aortic isthmus flow waveforms of fetuses with aortic anomalies: pulsus tardus of the fetus?

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Objectives: To test the hypothesis that the anacrotic notch (AN) observed in a preliminary study on the aortic isthmus flow waveforms (AoI-FWF) of fetuses with aortic stenosis (AoS) may reflect opposite influences of right and left ventricular ejections on blood flow direction through fetal AoI.

Methods: This is an observational retrospective study on fetuses with isolated valvular AoS.Time to peak velocities (TPV) of FWFs above the aortic(Ao) and pulmonary)PA) valves, and time to the AN on the AoI were measured and compared.

Results: 11 fetuses were included: 3 bicuspid Aov, 2 mild, 3 moderate and 3 with severe AoS. Seven presented a distinct AN in the AoI-FVWF (Fig.), a finding that has never been described previously. TPVs above the Ao (median: 0.055 sec. ± 0.035 to 0.075) was greater than those above the PA (0.040, ± 0.020 to 0.050). The times to the AN (0.04, ± 0.03 to 0.05) were similar to