Major additional findings on postmortem examination were most relevant in the etiological work-up and counselling of the cerebral condition, mainly in midline anomalies and isolated hydrocephaly.

OP14.02
Cystic abnormalities of fetal posterior fossa at 11–13+6 weeks scan
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Objectives: To study the diagnostic value of cystic abnormalities of the posterior fossa in the first trimester as a marker for chromosomal diseases and to assess how often it is associated with other anatomical defects.

Methods: This was a retrospective analysis of data from 15778 pregnant women sent to two referral fetal medicine centres for detailed ultrasound examination of fetal anatomy at 11 to 13+6 gestational weeks. All scans included extended systematical transabdominal and/or transvaginal examination of the fetal brain. In case of suspicion for brain anomaly 3D volumes were routinely acquired and analysed offline by 3D multiplanar reconstruction tool.

Results: Overall we diagnosed 50 fetuses with cystic abnormalities of the posterior fossa. In 43 cases (86%) it was associated with defects in other anatomical structures, in 7 fetuses (14%) posterior fossa abnormalities were isolated. 27 out of 50 pregnant women with fetal posterior fossa abnormalities opted for fetal karyotyping. In 20 of them (40%) various chromosomal abnormalities were found and the pregnancy was terminated. 23 women with multiple fetal abnormalities decided to terminate the pregnancy without further prenatal invasive tests. In 7 cases with isolated fetal anomaly the karyotype was normal. All 7 women in this group opted to continue with the pregnancy. At 20 weeks ultrasound scan 3 fetuses were diagnosed with Dandy Walker anomaly, 1 had an arachnoid cyst of the posterior fossa, 2 had Blake’s pouch cyst and in 1 case the posterior fossa had normal appearance. Two women with Dandy Walker anomaly decided to terminate the pregnancy at 20 weeks, the others continued and the sonographic diagnosis was confirmed in all of them after birth.

Conclusions: Cystic abnormalities of the posterior fossa in the first trimester of pregnancy is a strong marker for fetal chromosomal abnormalities. In most cases cystic abnormalities of the posterior fossa are associated with multiple malformations of other fetal structures. The prognosis of posterior fossa cystic abnormalities diagnosed in the first trimester of pregnancy is generally poor.

OP14.03
Evaluation of fetal ventriculomegaly at 11–14 weeks of gestation
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Objectives: The purpose of this study was to investigate fetal ventriculomegaly (VM) during 11–14 gestational weeks by measuring the plexus choroides and the lateral ventricles in the 2D horizontal plane used for the measurements of the biparietal diameter (BPD).

Methods: We performed a retrospective study in 121 patients that had first trimester exam in our institution. 100 fetuses with normal outcome were compared to 21 fetuses which had confirmed VM at the second trimester exam. Measurements were performed from stored images using the Viewpoint metering tools. The ratio between the plexus and lateral ventricle diameter (PDVD), the plexus and lateral ventricle length (PLVL), the plexus and lateral ventricle circumference (PCVC) and the ratio between the plexus and lateral ventricle area (PAVA) were calculated.

Results: The median [min;max] of the ratios were 0.72 [0.54;0.87] for PDVD, 0.74 [0.64;0.85] for PLVL, 0.74 [0.64;0.85] for PCVC and 0.59 [0.37;0.79] for PAVA in normal fetuses. For fetuses with VM the mean ratios were 0.49 [0.24;0.72] for PDVD, 0.38 [0.20;0.75] for PLVL, 0.47[0.22;0.71] for PCVC and 0.29 [0.06;0.45] for PAVA. All of the measurements showed statistical significant differences between normal fetuses and fetuses with VM (p<0.001). For a cut-off below the 5th percentile the sensitivity of PDVD, PLVL, PCVC, PAVA was 86%, 95%, 90% and 100%. The specificity of all four ratios was 95%.

Conclusions: Our results suggest fetal VM can be detected with a high sensitivity as early as the first trimester of pregnancy by using the measurements of the lateral ventricle and the plexus choroides in the standard 2D axial plane used for BPD measurements. In cases of suspected VM patients can be triaged to a specialist for further neurosonographic evaluation, follow up exams, prenatal counselling and possibly invasive testing to determine the cause of VM early on, before the 20 weeks exam.

OP14.04
Neurodevelopmental outcome of isolated fetal ventriculomegaly
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Objectives: There is limited data regarding the outcome of fetuses diagnosed with lateral ventriculomegaly. Moreover, most studies assessing outcome of ventriculomegaly cases were not limited to isolated ventriculomegaly (IVM). In this study we examined the outcome of fetuses diagnosed with ventriculomegaly after excluding infectious and genetic causes as well as anatomic anomalies.

Methods: We assessed 80 cases of isolated ventriculomegaly as defined by a normal TORCH screen, a normal amniocentesis and the absence of additional CNS anomalies in both neurosonogram and fetal MRI. Children were assessed at ages 18 to 36 months by the Vineland Adaptive Behaviour Scales (VABS).

Results: The average VABS score was within normal range (102.3) and there were no differences in average VABS scores between mild and moderate IVM (102.1 vs. 103.4, respectively, P=0.71) or between symmetric and asymmetric IVM (102.9 vs. 102.2, respectively, P=0.82). There were only 4 cases of abnormal VABS score (VABS < 85). There were no differences in the rate of abnormal VABS between mild and moderate IVM (4.3% vs. 10%, respectively, P=0.49) or between symmetric and asymmetric IVM (8.3% vs. 4.4%, respectively, P=0.42).

Conclusions: After excluding infectious and genetic causes as well as anatomic anomalies in cases of mild and moderate ventriculomegaly, a normal neurodevelopmental outcome is to be expected.

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