OR 1.16, CI OR: 1.03–1.33). Regression analysis revealed that the odds of failure increased as size of ectopic increased ($P = 0.045$, OR 1.85, CI OR 1.01–3.39).
Conclusions: Similar results to previous studies were found regarding failure rate of methotrexate therapy. The odds of failure of methotrexate therapy and need for surgical intervention increased by 16% for every 500 iu increase noted in pretreatment βhCG level. Size of ectopic pregnancy also played an important role with failure of therapy almost doubling as size of ectopic increased. Cutoff levels for size and βhCG at which risk of failure was considered clinically significant were calculated.

OC07.05
Comparing the subjective impression of the examiner to the hCG ratio and mathematical models for the management of pregnancies of unknown location (PUL)

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Objectives: Definitions of PUL differ between the UK and USA. We compared the subjective impression of the examiner of the likely location of PULs with the hCG ratio and a logistic regression model M4 for the prediction of the outcome.
Methods: 273 consecutive PULs had serial hCG and the final outcome recorded. The examiner's subjective impression on the first visit was recorded as true PUL (no evidence of a pregnancy at all), possible intrauterine pregnancy (IUP), possible ectopic pregnancy (EP) or possible failing PUL (FPUL). The performance of subjective impression was compared to previously published hCG ratio cut-off values (0.87 and 1.66 to discriminate between FPUL, EP and IUP) and the logistic regression model M4 for predicting outcome.
Results: The outcomes were: 40 (15%) EP, 189 (69%) FPUL and 44 (16%) IUP. For all the PUL data subjective impression correctly predicted 51%, 91% and 58% of EP's, failed PULs and IUPs respectively. Using subjective impression, the hCG ratio and the M4 model the sensitivity for predicting EP was 48%, 78% and 95% respectively while the specificity for predicting FPUL was 52%, 91% and 100% respectively. When applied only to the "True PUL" group, the hCG ratio predicted EP with a sensitivity of 82% and FPUL with a specificity of 93% compared to sensitivity for EP of 91% and specificity to FPUL of 100% when using the M4 model. Of the subjectively predicted failed PULs, 6% were found to be EPs compared to 3% when using the hCG ratio and 0% when using the M4 model. When subjective impression predicted IUP, 10% of these cases were EP.
Conclusions: The subjective impression to identify small gestation sacs and failing PUL leads to a false negative rate for EP. This is particularly the case with FPUL. Care must be taken when diagnosing an IUP on the basis of a small gestation sac without embryonic features. The hCG ratio and M4 model performed equally well on either the true PUL or general PUL populations suggesting these approaches may have good generalisability.

OC08: ANEUPLOIDY AND FETAL ANOMALIES: FIRST TRIMESTER II

OC08.01
^Diagnosis of fetal orofacial clefts in the first trimester: a three-dimensional (3D) ultrasound study

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Objectives: To determine whether systematic examination of the primary (PP) and secondary palate (SP) with 3D ultrasound aids in the identification of orofacial clefts in the first trimester.
Methods: 3D volume datasets were acquired prospectively from women undergoing first-trimester sonographic screening for aneuploidy. Multiplanar mode was used for off-line analysis of (1) the PP in the coronal plane at the base of the retronasal triangle and (2) the SP by virtual navigation in the axial plane. In addition, 3D datasets from 3 fetuses having a cleft palate diagnosed in the first trimester were retrospectively identified and included in the study group.
Results: A total of 240 3D datasets from 237 pregnancies (including 3 sets of twins) were independently examined by 3 operators, of which 89% were obtained transabdominally and 11% transvaginally. Quality of the 3D datasets was classified as good, fair, and poor in 76%, 20%, and 4% of cases, respectively. 7 fetuses had an orofacial cleft; in all of them both the PP and SP were affected and associated anomalies were present in 6 (86%). Using 3D off-line analysis, the PP was classified as intact in 229 (95%), clefted in 9 (4%), and indeterminate in 2 (1%). 7 of the 9 fetuses suspected to have a cleft affecting the PP were confirmed at birth or postmortem examination (false positive 22%). The SP was classified as intact in 217 (90%), clefted in 6 (3%), and indeterminate in 17 (7%). Clefts of the SP were confirmed in all the 6 suspected cases and missed in 1, which was diagnosed at 16 weeks (false negative 14%). The visualization rate was affected by the quality of the volume ($P < 0.001$, Pearson Chi-square) and gestational age ($P < 0.01$, *t*-test).
Conclusions: In our series, all cases of clefting of the PP and 86% of the SP were visualized using 3D sonography with reasonable false positive and negative rates. Virtual navigation on the fetal palate using the multiplanar mode seems to be useful in the diagnosis of clefting in the first trimester.

OC08.02
A novel view to assess the presence of nasal bone in the first trimester - pre-maxillary triangle view: a feasibility study

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Objectives: To introduce a novel view - pre-maxillary triangle view (PMT) for identifying the presence/absence of nasal bone in the first trimester fetuses.
Methods: The PMT view is obtained in a coronal section of the fetal face. The cranial components of the arms joining to form the apex of this triangle are the nasal bones. The frontal and alveolar processes of the maxillary bone form the caudal components of the two arms and the connecting base respectively. The apical portion of this triangle is noted to be missing in fetuses with absent nasal bone in the sagittal view. In order to assess the feasibility of obtaining this view at the 11–14 week scan, we conducted a pilot study in our newly established First Trimester Screening Unit. Fifty consecutive pregnant women with singleton pregnancies attending this unit for first trimester screening were included in this study. The feasibility of obtaining a PMT view was recorded prospectively.
Results: Out of the 50 pregnancies included and analysed in the pilot study, the PMT view was obtained in 47 cases (94%). In 39

^ This abstract has been shortlisted as a finalist for the Alfred Kratochwil 3D abstract award. The winner will be announced at the closing ceremony.

cases, the PMT view was obtained transabdominally and in eight cases, transvaginally. There was a statistically significant difference in the median CRL in these two groups - 64 mm versus 51 mm ($P = 0.0002$), respectively.
Conclusions: It is evident from this pilot study that it is feasible to obtain the PMT view in a high percentage of cases. Fetuses at lower gestation may need transvaginal scanning to obtain this view, which can be used either instead of sagittal section for assessment of the nasal bone or to confirm the findings in the sagittal section. Prior to implementing this view on a large scale, we need to assess the inter and intra-observer variability in obtaining and interpreting this view.

OC08.03
Assessment of posterior fossa in fetuses with Dandy-Walker malformation at 11–13 weeks: a pilot study

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Objectives: The mid-sagittal view of the fetus is used routinely for nuchal translucency measurement in screening for chromosomal anomalies between 11+0 and 13+6 weeks' gestation. There is some evidence that this view may be helpful in assessment of the fetal posterior fossa and in early diagnosis of the spina bifida. Normal values of fetal brain stem (BS) diameter as well as distance between the brain stem and the occipital bone (BSOB) in the first trimester of pregnancy have been recently established. The aim of the study is to demonstrate the potential clinical applicability of these measurements for early detection of Dandy-Walker malformation (DWM).
Methods: The brain stem diameter, brain stem to occipital bone diameter, 4th ventricle and cisterna magna were evaluated retrospectively using mid-sagittal view in 4 fetuses with Dandy-Walker malformation and in 40 normal controls matched for crown–rump length at 11+0 to 13+6 weeks. The values in the two groups were compared.
Results: In contrast to the normal controls, in fetuses with Dandy-Walker malformation at 11–13 weeks' gestation the border between 4th ventricle and cisterna magna was not visible. There was no significant differences in the brain stem diameter between two groups ($P = 0.3$). In the DWM group, the mean diameter of the BSOB was found to be significantly higher than in the controls ($P < 0.01$) and it was above the 95th centile in all 4 cases (average Z-score = 3.7). In addition BS diameter to BSOB diameter ratio was significantly decreased in fetuses with DWM (average Z-score =− 4.3).
Conclusions: To our knowledge this is the first study to evaluate potential clinical applicability of the fetal posterior fossa measurement indices retrieved from mid-sagittal view of the head for early detection of Dandy-Walker malformation. Further prospective studies in a clinical setting are needed to confirm the value of these parameters as a screening tool for DVM in early gestation. Our initial results are however promising.

OC08.04
Resolution of enlarged nuchal translucency or cystic hygroma prior to chorionic villus sampling: impact on outcomes

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Objectives: Previous research has demonstrated a direct correlation between increasing nuchal translucency (NT) and aneuploidy, major structural malformations, and adverse pregnancy outcome. Little is known, however, regarding outcomes of an enlarged NT or cystic hygroma (CH) that resolves in the interval prior to chorionic villus sampling (CVS). We sought to assess outcomes of an enlarged NT or CH that resolved prior to CVS.
Methods: This was a retrospective cohort study of patients in our ultrasound database who presented for first trimester screening between January 2003 and December 2009. Patients were included if they had an enlarged NT measuring > 2.5 mm or CH, and if they underwent CVS at our institution. Medical records were reviewed to determine the date of NT measurement and CVS, NT measurement at the time of CVS, pregnancy and neonatal outcomes. Cases were stratified to compare outcomes of those with persistent enlarged NT or CH to outcomes of those in whom the enlarged NT or CH was no longer visualized at CVS. Cases were excluded if the NT was not reassessed or reported at the time of CVS.
Results: 224 cases of enlarged NT or CH were identified that underwent CVS. Of those, the enlarged NT / CH resolved in 30 (12%) and persisted in 194 (87%); There was a significantly higher rate of aneuploidy in the group with a persistently enlarged NT / CH (Table 1).
Conclusions: Persistence of an enlarged NT or CH between the time of diagnosis and presentation for CVS was associated with higher rates of aneuploidy. Further research is needed to explore the impact of varying gestational ages at the time of diagnosis, as well as interval between diagnosis and CVS.

OC08.04: Table 1

	Resolved NT (n = 30)	*Persistent NT (n = 194)*	P
Mean CRL at initial NT (mm)	47.0 ($n = 29$)	54.9 ($n = 179$)	0.0004
Interval between NT and CVS (days)	5.7 ($n = 30$)	1.5 ($n = 184$)	< 0.0001
Twins	30% (9/30)	15% (29/194)	0.04
Aneuploidy	13% (4/30)	41% (78/189)	0.003
Abnormal anatomy	15% (3/20)	28% (24/86)	0.236
Live birth	82% (18/22)	48% (55/115)	0.0003

OC08.05
Increased detection of structural abnormalities in the first trimester using aneuploidy markers

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Objectives: To determine the sensitivity of first-trimester ultrasound for diagnosing different structural anomalies in chromosomally normal pregnancies, and the role of nuchal translucency and ductus venosus blood flow in the detection of abnormalities.
Methods: This was a retrospective study including chromosomally normal singleton pregnancies with an 11–14 week scan performed in our center during the 2002–2009 period. An early fetal anatomy survey and assessment of nuchal translucency and ductus venosus blood flow were performed.
Results: Among 14,368 scanned first trimester pregnancies, 439 fetuses (2.7%) were found to present with structural anomalies. Forty-nine percent of major structural anomalies were detected, higher rates than expected were found for skeletal (69%) and cardiac defects (56%).
Conclusions: About half of major structural abnormalities can be diagnosed in the first trimester. The finding of an increased nuchal translucency or abnormal ductus venosus blood flow may increase the early detection of cardiac and skeletal defects