in tubal arteries by enabling demonstration of high vascularity in approximately 94% of ectopic pregnancies. The appearance and the location of the blood flow relate to the gestational sac dimension and flow velocity waveform characteristics and are similar to those obtained from the spiral arteries in normal intrauterine pregnancies (RI = 0.42 ± 0.12). Color Doppler studies demonstrate a high quantity of color in ectopic pregnancies with vital trophoblast and/or a live embryo as well as those with relatively high beta hCG levels. Demonstrations of the "hot flow pattern" shortens the diagnostic process and enables an easier clinical decision to be reached on the treatment of ectopic pregnancy. Based on our clinical experience in patients with less color signals and increased vascular resistance to blood flow, both indicating a non-vital trophoblast and/or long-standing demise, expectant management can be introduced. Our preminary data suggest that three-dimensional sonography is an effective procedure for early diagnosis of ectopic pregnancies, which enables demostrations of hyperechoic border, an apparently specific feature not reported by conventional ultrasound studies. It seems that shortening diagnostic procedure process and proper selections of the patients based on color Doppler an 3D ultrasound evaluation enables introduction of more sufficient treatment options.

L41

EARLY PREGNANCY COMPLICATIONS ASSESSED BY COLOR DOPPLER AND THREE DIMENSIONAL ULTRASOUND

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Objective: To investigate the role of 3D and color Doppler ultrasound in the evaluation of the patient with early pregnancy complications.
Design and Methods: Seventy five patients whose gestational age ranged from 6 to 14 weeks presented with vaginal bleeding, closed cervix, ultrasound finding of a living embryo and subchorionic hematoma were analyzed with both methods. A total of 150 matched controls were randomly selected from a pool of 1200 pregnant women in the same gestational age who were studied during the one year period at our Department. Subchorionic hematoma was diagnosed as echo-poor or echo-free area between the chorionic membrane and the myometrium. Multiplanar imaging enabled correct imaging of the subchorionic hematoma diameters and volume in each patient. The hematoma size was categorized as a small or large, according to whether it was more or less than 20ml. Color flow Doppler was used to visualize spiral arteries and blood flow velocity waveforms were analyzed by means of pulsed Doppler using resistance index (RI) as the measurement parameter. The patients were evaluated in two weeks` period, at least three times, and both parameters, the hematoma volume and spiral artery RI were statistically analyzed.
Results: Hematomas ranged from 9.5 to 78.4 ml. The RI slowly declined during the 8 weeks` period, while hematoma volume showed a week positive correlation. Most spontaneous abortions occurred in the group of the patients with subchorionic hematomas (18.7% vs 6%), documenting a significant difference. Another significant factor was the presence of the hematoma in the corpus of the uterus.
Conclusions: Three-dimensional ultrasound enables precise localization and volume measurement of the hematoma, while color Doppler evaluation allows dedection of the patients with altered spiral artery blood flow who are at increased risk for spontenous abortion.

L42

TRANS-ABDOMINAL CERCLAGE

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The treatment of repeated early pregnancy loss caused by incompetence of the cervix by means of transvaginal cervical cerclage is well documented, however, the vaginal procedure may be rendered unfeasible or unsuccessful by a cervix that is badly lacerated, very short, or absent. Benson and Durfee, in 1965 were the first to report on transabdominal cervical cerclage, stating,"we have reasoned, if cervical cerc-

lage during gestation is indicated but the vaginal approach is impossible, why not accomplish constriction from above?" All agree, however, that whatever approach is used, the operation is better done during pregnancy.
In 1977 we introduced a modified technique reporting our first 10 cases with fetal salvage of 87.9% in otherwise hopeless cases (Mahran, 1978). In 1991 Novy published a review of 25 years experience of published cases (111 cases).
This study includes 250 cases our experience until the end of the year 2001 with an adjusted fetal salvage of 90.7 %.

L43

PRENATAL DIAGNOSIS OF ANEUPLOIDY IN THE FIRST TRIMESTER USING ULTRASOUND AND MATERNAL SERUM BIOCHEMISTRY
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Screening for trisomy 21, often in conjunction with screening for neural tube defects, by the measurement of second trimester maternal serum biochemical markers has become an established part of obstetric practice in many countries.
Although trisomy 21 screening protocols vary from centre to centre the average detection rate in prospective studies has been 64% (range 48-75%) for a false positive rate of about 5%. For the other major chromosomal anomalies, only algorithms for trisomy 18 have been successfully implemented in routine practice.
During the last decade, extensive research has demonstrated that effective screening for chromosomal abnormalities can be achieved by maternal serum free b-hCG and pregnancy associated plasma protein-A (PAPP-A) and the ultrasonographic measurement of fetal nuchal translucency (NT) thickness. In a multicentre study involving about 100,000 pregnancies screening by fetal NT, with measurements performed in a standardised way (defined by the Fetal Medicine Foundation; www.fetalmedicine.com) by suitably trained sonographers, the detection rate for trisomy 21 was 73% for a 5% screen positive rate.
Subsequently, it was estimated that a combination of fetal NT with maternal serum free b-hCG and PAPP-A would increase the detection rate for trisomy 21 to about 90% and also allow the detection of 90% of other chromosomal anomalies, including trisomy 13, trisomy 18, turner's syndrome and triploidy.
The advent of rapid immunoassays, suitable for point-of-care testing, has enabled the development of a multidisciplinary one-stop clinic for assessment of risk for fetal anomalies (OSCAR). Within a one hour visit, the patient can receive pre-test counseling, blood collection and biochemical testing, ultrasound examination and post-test counseling of a combined risk estimate. The first year of prospective intervention screening using this approach has been reported.
In this paper I will summarise results from three years of screening for chromosomal anomalies in our routine NHS OSCAR clinic in which we have screen approximately 12,000 women. The uptake of first trimester screening was 97.5% and the uptake of invasive testing in the increased risk group was 77%. The rate of detection of trisomy 21 was 92% (23 of 25), of trisomy 13 or 18 was 100% (al115) and of all aneuploides was 96% (49 of 51). The false positive rate was 5.2%. I will also report on the outcome of screening 15,030 pregnancies in a private Fetal Medicine Centre, in which 91.5% (75 of 82) cases of trisomy 21 were identified along with 88.5% (54 of 61) of pregnancies with other chromosomal anomalies. I will also outline results from 3 years of screening in our private self referral OSCAR centre
I will conclude with a discussion of new research initiatives which may enhance the OSCAR process and lead to even higher detection rates (95%) at a much lower false positive rate (2%) for trisomy 21.