

162 Experimental pulmonary hypoplasia due to oligohydramnios: The influence of the time of onset and the duration of oligohydramnios. S. Yoshimura, H. Masuzaki, K. Kotera, Y. Ikeda, T. Yamabe, Dept. Obst. and Gynec., Nagasaki Univ. Sch. Med., Nagasaki

To investigate the influence of timing and duration of oligohydramnios on fetal lung development, silastic tube were shunted amniotic fluid into the maternal abdominal cavity at day 22, 24, 26 and 28 of pregnancy in New Zealand White rabbits (term is 31 days). The weight of the body (BW), the lung (L) and the liver (Li) were measured, and ratio (L/BW and Li/BW) were calculated. We quantitated the separation of terminal air space in lung and measured L/S ratio in lung tissue. Compared with littermate control the BW and L/BW ratio were significantly decreased in experimental fetuses operated at 22day (18.18g vs 29.54g and 0.026 vs 0.033), and Li/BW was similar in both fetuses. The separation of terminal air spaces was decreased in experimental groups operated at 22day (2.05 vs 2.76), but L/S ratio in lung tissue was significantly elevated (7.72 vs 5.67). We conclude that oligohydramnios interferences with lung development, and that the degree of this interference depends on the time of onset and the duration of oligohydramnios.

163 Prediction of the prognosis in growth retardated fetus by Doppler ultrasound velocimetry. H. Tamura, H. Mizunuma, Y. Ibuki, M. Igarashi, Dept. Obst. and Gynec., Gunma Univ. Sch. Med., Maebashi.

To evaluate the condition of intra-uterin growth retardated (IUGR) fetuses, we studied Pulsed Doppler velocimetries of the middle cerebral arteries (MCA) and the umbilical arteries (UaA). 15 IUGR fetuses were tested in 3~8 weeks (period A) and within 2 weeks (period B) before delivery. In IUGR fetuses with maternal toxemia (n=7), the mean systolic-diastolic (S-D) ratio of MCA and UaA were 3.29 ± 0.68 (mean \pm SD) and 3.72 ± 0.80 at period A, 2.44 ± 0.28 and 4.67 ± 1.52 at period B, showed redistribution of blood flow. Neonatal weight and delivery weeks were 1489 ± 432 g and 35.3 ± 1.9 weeks. In IUGR fetuses without maternal toxemia (n=8), S-D ratios in both periods were not significant different from those in normal grown fetuses. Neonatal weight and delivery weeks were 2158 ± 184 g and 39.0 ± 1.7 weeks. The growth rates of estimated weight of IUGR fetuses with MCA S-D ratio \leq UaA S-D ratio in period A were much lower than other IUGR fetuses. In addition, all of fetuses with MCA S-D ratio/UaA S-D ratio ≤ 0.5 in period B needed cesarean delivery for fetal distress. This data suggests that the measurements of S-D ratio of MCA and UaA by Doppler ultrasound velocimetries may be useful to predict the prognosis of growth retardated fetuses.

164 Prenatal diagnosis of meningocele with hydrocephalic fetus. T. Takagi, T. Hosono, K. Masuhiro, I. Iwata, N. Mitsuda, O. Tanizawa, Dept. Obst. and Gynec., Osaka Univ. Med. Sch., Osaka.

Lumbar meningocele, well associated with congenital hydrocephalus, is often difficult to diagnose antenatally. It has serious problems since neonatal period such as paralysis of lower extremities or urinary and rectal incontinences. In this study, several diagnostic procedures were evaluated using ultrasonography (USG), magnetic resonance imaging (MRI), hourly fetal urine production rate (HFUPR) and AFP levels in maternal serum and amniotic fluid. Among 30 cases of CNS anomalies, lumbar meningoceles were complicated in 11 cases (37%), which were diagnosed in 8 of 11 cases by USG, and in 7 of 10 cases by MRI. Combined with both procedures, all cases were diagnosed antenatally except one earlier case. The defect of subcutaneous tissue which indicated the presence of meningocele, was pointed out by MRI. The lack of urinary cycles were observed in 3 of 6 cases by measuring HFUPR, whereas normal urinary cycles were observed in 5 hydrocephalic fetus without meningocele. AFP levels in maternal serum and amniotic fluid were not elevated significantly in all cases. It is a new finding that lumbar meningocele can be diagnosed antenatally by MRI and there is a lack of urinary cycle in fetus with severe lumbar meningocele.