

First trimester shunting for fetal megacystis: initial results of an ongoing prospective trial

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Objective

Early fetal megacystis is associated with high perinatal mortality and morbidity due to pulmonary hypoplasia and renal failure. Early vesico-amniotic shunting (VAS) can preserve renal function as we could show in previous retrospective studies. Here we present the initial results of the prospective IUS 1st trial (IntraUterine Shunting in the 1st trimester) that analyzes the long term follow-up, focusing on nephrological outcome.

Methods

Prospective analysis of VAS for fetal megacystis >15 mm diagnosed before 14.0 weeks and treated prior to 15.0 weeks gestation using the Somatex Shunt. Pregnancy course, complications and perinatal outcome were analyzed. Nadir creatinine of the first year was monitored.

Results

VAS was performed in 27 fetuses at a median gestational age of 13.5 weeks (range 11.6-14.5). The mean bladder diameter was 31mm (range 16-46). One shunt was initially misplaced and needed reintervention the following day, all other interventions were successful. In 4 cases, we observed shunt dislocation in the subsequent course of pregnancy. 7 pregnancies were terminated after detection of severe other defects and one fetus died unexpectedly 3 weeks after VAS. 17 (63.0%) children were born alive at a median gestational age of 37.5 weeks (range 31.2-40.0). Two of them died in the neonatal period and one received palliative care. In all of these three latter cases severe anhydramnios persisted throughout the pregnancy despite correct placement of the shunt. None of the 14 survivors needed dialysis in the first year of life. The mean nadir creatinine was 0.25mg/dl (range 0.16-0.36). All 3 females showed an adverse outcome.

Conclusion

First trimester VAS can be offered for fetal megacystis. We were able to preserve renal function in all of the survivors. However, additional anomalies or multilevel obstructions are frequent and despite correct shunt placement may only be detected during the subsequent course of the pregnancy.