Risk Factors for Preterm Birth following Open Fetal Myelomeningocele Repair: Results from a Prospective Cohort

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BACKGROUND
Fetal myelomeningocele (fMMC) repair is a therapeutic option in selected cases. This study aimed to identify risk factors for preterm birth (PTB) following open fMMC repair.

METHODS
Sixty-seven women underwent fMMC repair and delivered a baby between 2010 and 2018 at our center. Demographic, surgical, and pregnancy complications, including potential risk factors for PTB such as preterm premature rupture of membranes (PPROM), chorioamniotic membrane separation (CMS), and placental abruption were evaluated.

RESULTS
Maternal body mass index, maternal age, parity, previous uterine surgery, gestational age at fetal surgery, total surgery duration, surgical subcutaneous hematoma, oligohydramnios, and amniotic fluid leakage were not identified as risk factors for PTB. CMS (p = 0.028, 92 vs. 52%) and PPROM (p = 0.001, 95 vs. 52%) were highly associated with PTB. Placental abruption was found more often in women after fMMC repair than in a general obstetrical population (12 vs. 1%) and ended in premature birth in all cases (p = 0.024, 100 vs. 60%). However, the majority of women delivered at a gestational age >35 weeks.

CONCLUSIONS
In our study cohort, risk factors for PTB were PPROM, CMS, and placental abruption, whereas surgery duration did not influence outcome. We conclude that the surgery technique should aim to minimize CMS and amniotic fluid leakage.