Fetal myelomeningocele repair through a minimal hysterotomy
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Objective
To demonstrate the feasibility and to present the initial results of fetal myelomeningocele repair through a minimal hysterotomy.

Methods
Study period: December 2014 to May 2015. Patients: consecutive cases of fetal isolated MMS with upper level of the spinal lesion above S2 and Chiari II malformation.
Surgical technique: Fetal MMC correction was performed as in the neonatal period (multilayer repair) through a smallest possible hysterotomy. The variables evaluated were:
- GA at surgery, upper level of the MMC, total time of surgery and time spent for MMC repair, size of the hysterotomy, maternal and fetal complications during surgery;
- postoperative complications, reversal of the Chiari II malformation on follow-up scans, time from surgery to delivery, GA at birth, maternal complications at birth, dehiscence of the hysterotomy, need for neonatal ventriculoperitoneal shunt.

Results
Fifteen surgeries were performed. Among these, median GA at surgery was 24.0 weeks (21.0 – 26.0), upper MMC level ranged from T11 – L5, median total surgery time was 4.0 h (3.67 – 4.25), median time for MMC repair was 2.15 h (1.45 – 2.83), median hysterotomy size was 3 cm (2.0 – 3.5). There were no maternal or fetal complications during surgery. One patient (1/15: 6.6%) had pulmonary atelectasis detected 2 days after surgery. During follow-up scans, all fetuses showed progressive reversal of the Chiari II malformation. There was no chorioamniotic separation. Two patients presented high premature preterm rupture of membranes (no oligohydramnios) one week prior to delivery. Eight patients have delivered so far. Median GA at delivery was 35.7 weeks (29.0 – 37.9). Only one patient delivered before 34 weeks. Median time from surgery to delivery was 10.07 weeks (7.4 – 12.0). There was no maternal complication at delivery. There was one case (1/8: 12.5%) of partial miometrial scar dehiscence (thin miometrial scar). None of the neonates needed ventriculoperitoneal shunts until hospital discharge.

Conclusion
Our initial experience shows that fetal MMC correction is feasible through a small hysterotomy. The preliminary perinatal results seem encouraging, especially regarding time from surgery to delivery, GA at birth and lack of serious maternal complications, especially total hysterotomy dehiscence.