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Bruce A. Kaufman and Michael D. Partington

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## Focus On Subspecialties

### Is fetal surgery for myelomeningocele repair ‘the new normal’?

by **Bruce A. Kaufman, M.D., FAAP**, and  
**Michael D. Partington, M.D., FAAP**

More than three years have passed since publication of the results of the Management of Myelomeningocele Study (MOMS), which compared fetal surgery to repair the spinal lesion with standard postnatal repair (Adzick NS, et al. *N Engl J Med.* 2011;364:993-1004). The principal findings were positive, with children who had undergone prenatal repair having improved outcomes in several areas at 30 months follow-up.

The specific areas of benefit were a decreased need for ventricular shunts, improved overall motor function and a higher rate of independent ambulation by 30 months. Of note, there was no evidence of a difference in cognitive outcomes or urological outcomes. One of the major concerns raised at the time of the study (which is outlined in an editorial that accompanies the report in *NEJM*) was that 79% of the children in the fetal surgery group had preterm deliveries, with the expected associated risks.

Since the results were published, a number of issues have been identified that merit further study before this management option can be considered as a “standard” care.

From the beginning, it was realized that the trial design was so stringent that it would be difficult to apply the technique broadly. First, developing and operating a fetal therapy program was limited to the three centers that participated in the study (Vanderbilt University, Children’s Hospital of Philadelphia and University of California, San Francisco). This had come about because organized pediatric neurosurgery proposed a moratorium on other centers doing the surgery until the trial was complete.

The second major issue was recognition that the extent to which the results could be generalized was unknown. The MOMS study excluded

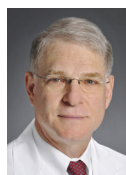
women with complex obstetrical histories, a body mass index (BMI) greater than 35 and other pregnancy complications.

An initial consortium supported by the National Institutes of Health was convened to establish a framework for expanding the technique beyond the original centers. While no particular limits were set, the new centers were encouraged to use care protocols similar to those used in the trial, track their results in a central database and communicate with each other. The majority of these centers are registered within the North American Fetal Therapy Network ([www.naftnet.org](http://www.naftnet.org)).

It also has been determined that the follow-up period of the MOMS patients will be extended to establish if the reported benefits persist long term and to monitor for the development of other adverse effects of preterm birth.

The consortium is meeting regularly to discuss the process of expanding the use of fetal surgery and the possibility of including maternal patients with higher BMIs.

Three years after the release of the MOMS trial results, the majority of myelomeningocele repairs still are postnatal. The number of centers performing fetal surgery has increased but appears to be stabilizing. While awaiting the long-term results of the initial trial, the hope is that further developments in fetal therapy for myelomeningocele will be developed and studied carefully.



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Dr. Partington

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