

Fetal surgery for spina bifida may improve outcomes

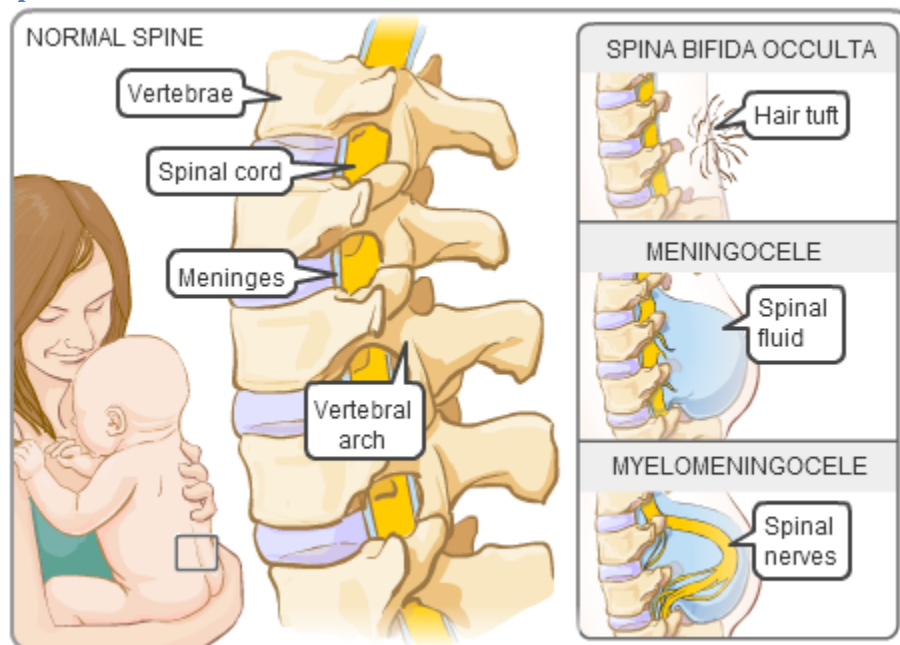
<http://www.aboutkidshealth.ca/En/News/NewsAndFeatures/Pages/Fetal-surgery-for-spina-bifida-may-improve-outcomes.aspx>

A new study in the *New England Journal of Medicine* suggests that surgery for myelomeningocele while a fetus is still in the womb may improve outcomes. Fetal surgery is not new, but it is complicated, rare, and not always helpful, usually reserved for fetuses at the highest risk for problems if the repair is left until after birth.

Between 2 and 4 babies of every 1000 babies born in Canada have neural tube defects, according to the Motherisk program; spina bifida is one of the most common. Myelomeningocele is a common and severe form of spina bifida, in which the vertebrae are not fully formed and the spinal cord bulges out of the spine. About 1 in 10 babies born with myelomeningocele die in the first year of life; others are usually paralyzed in the legs and feet, have problems with bowel and bladder control, and need a shunt to control hydrocephalus (a build-up of fluid in the brain). A shunt is a soft, flexible tube that is surgically placed in the body and drains fluid out of the brain.

The usual treatment for myelomeningocele is surgery shortly after birth, but this surgery cannot fully correct the problems. In addition, it is thought that paralysis and hydrocephalus may get steadily worse even while the fetus is still developing in the womb. For these reasons, fetal surgery could potentially help with this condition.

Spina Bifida



If the neural tube does not fully close during fetal development, spina bifida can result. In spina bifida occulta, some vertebral arches are missing, but the spinal cord and meninges usually do not protrude through. There may be a dimple or patch of hair. In meningocele, the meninges that surround the spinal cord protrude through the gap in the vertebral canal. Myelomeningocele also has a fluid filled sac which protrudes, but the sac also contains some spinal cord and spinal nerves.

The MOMS study looked at 183 women who had been randomized to either fetal surgery before 26 weeks' gestation, or a control group whose babies had surgery after birth. Women were not eligible for the study if they were having twins or multiples, if their fetus showed chromosomal abnormalities or other defects that were not related to myelomeningocele, if they were at risk for preterm birth, or if they could not have surgery.

Although fetal surgery was by no means a miracle cure, babies who had had fetal surgery were less likely to need shunts before 12 months of age (40%, compared with 82% in the control group) and more likely to be able to walk independently at 30 months of age (42%, compared with 21% in the control group). The trial was stopped early when it became clear that babies that had fetal surgery did so much better than babies in the control group.

Prenatal surgery had a much higher rate of complications for both mothers and babies, including spontaneous rupture of the membranes, premature birth, and uterine scarring or thinning.

An accompanying editorial warns physicians to be cautious when counselling expectant parents about the procedure, noting that "It is human nature to overestimate the likely benefit for one's own fetus and to underestimate the associated risks." The editorial also cautions that the surgeries in the trial were carried out at just 3 hospitals, meaning that results at other hospitals may not be as good while surgical staff are perfecting the procedure.

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Sources:

Adzick NS, Thom EA, Spong CY, et al. A randomized trial of prenatal versus postnatal repair of myelomeningocele. *The New England Journal of Medicine*. 2011: published online February 9. Available at: <http://www.nejm.org/doi/full/10.1056/NEJMoa1014379>

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