

21. Kahn NF, Halpern CT. Experiences of vaginal, oral, and anal sex from adolescence to early adulthood in populations with physical disabilities. *J Adolesc Health* 2017;.
22. Woodhouse CR, Lipshultz L, Hwang K, Mouriquand P, Creighton S. Adult care of children from pediatric urology: part 2. *J Urol*. 2012;188:717–723.
23. Joseph DB. Current urologic management of spina bifida. *AUA Update Ser.* 2015;34:247–255.
24. Tanaka S. Transition from pediatric to adult health care in urology. *AUA Update Ser.* 2015;34:257–263.
25. Casteel C, Martin SL, Smith JB, Gurka KK, Kupper LL. National study of physical and sexual assault among women with disabilities. *Injury Prev.* 2008;14:87–90.
26. Barrett KA, O'Day B, Roche A, Carlson BL. Intimate partner violence, health status, and health care access among women with disabilities. *Women's Health Issues.* 2009;19:94–100.

Heidi Castillo, M.D., Developmental Pediatrics, Department of Pediatrics, Baylor College of Medicine, Houston, TX

<https://doi.org/10.1016/j.urology.2018.04.047>
UROLOGY 123: 286, 2019. © 2018 Elsevier Inc.



AUTHOR REPLY

We appreciate the comments of the reviewer. As pointed out in the editorial and discussed in our paper, the lack of research on pregnancy and delivery among women with spina bifida impedes preconception counseling and birth planning for these women. This study provides foundational knowledge to have informed conversations with women with spina bifida interested in pregnancy.

The benefit of performing a population-based study with a large database such as the National Inpatient Sample is that it allows for a better understanding of rare events in small populations such as, delivery among women with spina bifida. However, it does come with limitations. In this study, we described overall trends among all women with spina bifida and also distinguished between those women with spina bifida with and without hydrocephalus and with spina bifida occulta. While we are unable to verify the appropriateness of these subcategories, the findings of increased likelihood of a cesarean delivery and increased odds of complication during delivery with increasing severity of spina bifida seems appropriate. As commented on in the editorial, nearly 43% of women with spina bifida occulta underwent a cesarean delivery compared to 32% of women without spina bifida. This could be due to symptomatic disease in this cohort causing problems such as leg weakness or changes in sensation that could make labor more difficult and obstetricians more cautious. Alternatively, given that obstetricians may not be familiar with distinguishing between types of spina bifida, some of these women may actually have open spina bifida but were assigned the incorrect ICD-9 code.

Nonetheless, this study provides a needed starting point for informing both doctors and women with spina bifida about delivery. Further research including multi-institutional reviews and interviews with women who have been pregnant are necessary for a more comprehensive understanding of pregnancy and delivery in women with spina bifida.

Courtney Shepard, M.D., Urology, University of Michigan, Ann Arbor, MI

<https://doi.org/10.1016/j.urology.2018.04.048>
UROLOGY 123: 286, 2019. © 2018 Elsevier Inc.

EDITORIAL COMMENT



The authors present a thought-provoking analysis of a large database (National Inpatient Sample) regarding delivery and peripartum complications among women with spina bifida (SB) vs those without SB. Women in this sample with SB had a significantly higher rate of cesarean delivery. Specifically the frequency of cesarean delivery increased with the presence of SB and increasing severity of SB (no SB < SB occulta < SB without hydrocephalus < SB with hydrocephalus). It is puzzling that those with a potentially benign diagnosis such as SB occulta had such an increased frequency of cesarean delivery. Women with SB who had a cesarean delivery did have higher odds of morbidity (ie, preterm delivery, urinary tract infection, hematologic event, and blood transfusion) compared to those without SB who had the procedure.

The results highlight important implications for women of childbearing age with SB of whom there has been a paucity of information. Clearly, the results provide healthcare providers who care for women with SB with much needed evidence to facilitate informed dialogue about potential risks at delivery.

As the authors appropriately acknowledge, the data is exclusively drawn from hospital discharge encounters. The reliability of using ICD-9 codes to determine the type and severity of SB is unclear and relying on providers who may not be familiar with the nuances of SB classification may be significantly problematic. However, this type of analysis is useful in identifying overall trends and information about rare events in an SB population. The lack of SB specific details necessary for teasing out clinical differences provides fodder for future studies that can follow. These findings present an opportunity for more meticulous SB-related research, as well as a basis for future guidelines regarding care for this population living with such a complex condition.