EDITORIAL

Bed rest after filum surgery

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TRANSECTION of the filum terminale is usually a prophylactic operation in asymptomatic children. It is therefore very important that complications are minimized. Ogiwara et al. have examined a large cohort of children undergoing this procedure and have focused on the main significant complication: CSF leakage.¹ They address the question of whether a longer period of postoperative bed rest (8 days vs 3 days) reduces the incidence of CSF leakage.

Between May 2003 and June 2012, 238 children had filum sectioning and were kept flat in bed for 8 days. After July 2012, 116 children were kept flat for 72 hours. None of the children in either group developed CSF leakage, and 1 child in the 8-day group had a pseudomeningocele identified on MRI.

This is an interesting study from a number of perspectives. Clearly, these authors have demonstrated that the operation can be done with a very low risk of a CSF leak. They describe a meticulous multilayer closure including replacement of bone, double suturing of the fascia, and no dural sealant. They had no leaks in 354 children. Although these appear to be very good results, the series, as reported, raises a number of questions.

First, how does one keep a child of this age flat in bed for 72 hours, or 8 days? The median age in the 2 study groups was 15 and 18 months, so most of these children will be rolling over, sitting, and standing. Was sedation used? How were they fed during the flat time?

Retethering in this cohort was very rare; only 1 patient experienced retethering (0.3%). Other studies have reported rates of 2.7%, 5.1%, and 8.6%.^{2–4} Variations in retethering could be related to the duration of follow-up and/or variation in the definition of retethering. Further information on the diagnostic criteria for retethering in this study would be interesting.

Finally, all patients in this series had an MRI study

1–2 weeks after surgery. A single pseudomeningocele was identified. The findings are not described for the other patients, but would be very helpful to know. At this age, many patients would require sedation for MRI. Was the small risk of sedation and the added cost of routine MRI offset by clinically important findings?

I agree with the authors' conclusion that bed rest for more than 72 hours is not necessary. I applaud their ability to significantly shorten the hospital stay, but in many health care environments today, even 72 hours of postoperative bed rest could be challenged. The next important question is whether any bed rest is necessary. The problem will be sample size. Based on the data presented by Ogiwara et al., the sample size will be large. If, for example, we use these data and assume 0 leaks with 3 days of bed rest, we would need 1030 patients in a study to detect a leak rate of 2% or 2082 patients to detect a 1% leak rate. Perhaps reports from surgeons who do not require any bed rest will get us started.

<http://thejns.org/doi/abs/10.3171/2014.11.PEDS14485>

References

- Ogiwara H, Joko M, Takado M, Uematsu K, Kameda M, Sasaki N, et al: Duration of the horizontal decubitus position for prevention of cerebrospinal fluid leakage following transection of a tight filum terminale. **J Neurosurg Pediatr** [epub ahead of print February 6, 2015]. DOI: 10.3171/2014.9.PEDS14289]
- Ogiwara H, Lyszczyk A, Alden TD, Bowman RM, McLone DG, Tomita T: Retethering of transected fatty filum terminales. **J Neurosurg Pediatr** 7:42–46, 2011
- Ostling LR, Bierbrauer KS, Kuntz C IV: Outcome, reoperation, and complications in 99 consecutive children operated for tight or fatty filum. **World Neurosurg** 77:187–191, 2012
- Yong RL, Habrock-Bach T, Vaughan M, Kestle JR, Steinbok P: Symptomatic retethering of the spinal cord after section of a tight filum terminale. **Neurosurgery** 68:1594–1602, 2011

ACCOMPANYING ARTICLE See pp 461–464. DOI: 10.3171/2014.9.PEDS14289.

INCLUDE WHEN CITING Published online February 6, 2015; DOI: 10.3171/2014.11.PEDS14485.

DISCLOSURE The author reports no conflict of interest.

Response

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We sincerely appreciate the kind and insightful editorial from Dr. Kestle for our paper “Duration of the horizontal decubitus position for prevention of cerebrospinal fluid leakage following transection of a tight filum terminale.” As Dr. Kestle suggested, transection of the filum terminale is mostly a prophylactic operation. In such cases both minimizing complications and maintaining the quality of the patient’s postoperative period are important. Shortening the bed rest to 72 hours definitely improved the quality of our patients’ postoperative time without raising the complication rate.

The bed rest was maintained using a bandage that fixes the body trunk to the bed for younger children without sedation. The infants can turn their head to the side and be fed with a bottle. Therefore, there was no risk of sedation.

Regarding the relatively low rate of retethering, we will have to wait for a while to know the real rate of retethering, since many patients in our series have not reached the age of 5–10 years, which is when most cases of retethering occur.

As Dr. Kestle pointed out, the next important question is whether any bed rest is necessary. After this study we have shortened the bed rest to 1 day, and the results have been good so far. We are planning to analyze the results of no bed rest in the future. If it is possible without raising the complication rate, it would be very beneficial for the patients.