Normalisation of colon transit time in a spina bifida adolescent after neurosurgery for retethering

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Dear Editor:

In 2013, we published our study 'Colon transit time and anorectal manometry in children and young adults with spina bifida' [1].

In the above-mentioned study, colon transit time (CTT) and anorectal manometry (ARM) were used as diagnostic tools in relation to the eventual achievement of spontaneous faecal continence in spina bifida (SB) patients.

In the study cohort, eight SB patients were spontaneously continent. Of these, seven had a normal colon transit time and one, a 15-year-old girl, had a delayed CTT (100.8 h). Later on, she developed urinary incontinence as result of the development of a neurogenic bladder. She started using clean intermittent catheterization (CIC) and regained urinary pseudo-continence. A MRI scan confirmed a retethering of the spinal cord. In January 2013 (2 months after the CTT), the girl underwent lumbosacral tethered cord release with resection of scar tissue, release of the conus medullaris and removal of fibrotic tissue for maximal relaxation of the conus medullaris.

In May 2013, 4 months after neurosurgery, the CTT was repeated and revealed a decrease from 100.8 h before surgery to 88.8 h (normal values <2.4–86.4 h). In October 2013, 10 months after neurosurgery, the CTT further decreased to 81.6 h. Two of the three CTT X-rays were combined with a full spine control X-ray in order to reduce radiation exposure.

She sustained her spontaneous faecal continence throughout this period. Three months after neurosurgery, the CIC was stopped as she had regained spontaneous urinary continence.

In literature, there is no intrapersonal variation described on colon transit time. Therefore, any found difference can be due to intrapersonal variation. However, together with the gradual

normalisation of colon transit time, clinical complaints became better and normalised, so tethered cord release will be of influence on both the technical examinations as the clinical condition.

In the published article, a flowchart was created using CTT and ARM, and the negative predictive value of the CTT to become spontaneously faecal continent was calculated, based on the initial results. Including the new results both can be adjusted. The original negative predictive value of the CTT to become spontaneously continent was 95 %. The unexplained 5 % was due to this 15-year-old girl with spinal retethering which probably would have led to the development of faecal incontinence besides the urinary incontinence if it would not have been treated. The gradual normalisation of the CTT after neurosurgery increases the negative predictive value of CTT to 100 % if data are recalculated based upon the latest CTT. Thus, meaning that all spina bifida children with a delayed CTT, independent of the result of resting pressure of ARM, will need treatment to achieve faecal pseudo-continence.

Moreover, in SB patients who are spontaneously faecal continent, a delay in CTT could indicate a retethering which should be ruled out.

This observation supports the conclusion that there is a possible role for CTT in predicting and following the need for treatment to achieve faecal (pseudo-) continence in SB patients.

Conflict of interest The authors declare no conflict of interest.

Reference

1. Velde SV, L. Pratte, H. Verhelst, V. Meersschaut, N. Herregods, M. Van Winckel, S. Van Biervliet. Colon transit time and anorectal manometry in children and young adults with spina bifida. *Int J Colorectal Dis* 2013 Jun 29 Epub.

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