Comment on: The value of post-operative MR in tethered cord: a review of 140 cases by P. David Halevi, Suhas Udayakumaran, Liat Ben-Sira, Shlomi Constantini

Dachling Pang

Received: 4 September 2011 / Accepted: 4 September 2011 / Published online: 29 September 2011
© Springer-Verlag 2011

I read with interest Halevi and colleagues' paper on postoperative MRI (POMR) in tethered cord surgery. I must admit I only partially agree with their recommendation of not ordering POMR.

I wholeheartedly endorse the authors' view that there is no value in having a POMR in patients with fatty filum, but the situation is different with the other lesions in their series. I especially refer to the complex lipomas. With total or near-total resection of these lipomas and radical reconstruction of the neural placode, a strong statistical correlation exists between recurrence-free survival and the cord–sac ratio (the ratio of the sagittal diameter of the reconstructed neural placode to that of the thecal sac at the site of lipoma resection) on the postoperative scan [1, 2]. A low ratio, i.e., a capacious sac, all but guarantees good long-term outcome, whereas a high ratio, i.e., a crowded sac, predicts a much higher incidence of retethering. It is true that we have never gone back to surgery based solely on the POMR findings in lipomas, but a large amount of residual fat and/or a high cord–sac ratio will put us on high alert for recurrent symptoms and prompt us on a closer monitoring schedule for the patient. It might even be prudent, in our prevailing medicolegal climate, to discuss candidly with the patient and family about the stark reality of expectations in face of a bad-looking scan.

In the case of dermoids, I would argue that unless incomplete removal of the cyst wall had been deemed technically unfeasible by the surgeon at the time of surgery, an unexpected residual piece of dermoid should be

reoperated on with the intent to complete resection before impossible adhesions develop between nerve roots and cyst wall. For this reason, the POMR after dermoid resection should be obtained within 1 to 2 days after surgery.

For type I split cord malformation (SCM), it would not only be beneficial to assess the thoroughness of removal of the bone spur and dural septum on the POMR, but particularly to see if the hemicords are adherent to the stump of the resected spur. Postoperative ventral tethering and distortion of the hemicords had been well documented for both types of SCM [3] and should be deliberately sought for in the POMR.

The authors mentioned residual terminal syringes in the POMR, and there are data to show that enlargement of the syrinx often presages recurrence of tethering (authors' references 8 and 13). The value of having a postoperative baseline is obvious.

Routine POMR after all tethered cord surgery is admittedly a trifle excessive even in affluent societies with luxuriant resources, but its summary banning will at times conceal information advantageous to patient care, not to mention precluding opportunities to learn more about these lesions. Thus, I take a selective approach in ordering POMR for tethered cord surgery: no for thickened filum, but yes for complex lipomas and SCM, and emphatically yes for dermoids and terminal syrinx.

References

1. Pang D, Zovickian JG, Oviedo A (2009) Long term outcome of total and near total resection of spinal cord lipomas and radical reconstruction of the neural placode part I: surgical technique. *Neurosurgery* 65:511–529
2. Pang D, Zovickian JG, Oviedo A (2010) Long term outcome of total and near total resection of spinal cord lipomas and radical reconstruction of the neural placode part II: outcome analysis and preoperative profiling. *Neurosurgery* 66:253–273
3. Pang D (2001) Ventral tethering in split cord malformation. *Neurosurg Focus* 10(1):e6

D. Pang
Division of Paediatric Neurosurgery,
University of California, Davis,
Sacramento, CA, USA

D. Pang (✉)
Paediatric Neurosurgery, Kaiser Permanente Medical Centre,
Oakland, CA, USA
e-mail: pangtv@aol.com