Reviewer's comment concerning “Calcified Giant Thoracic Disc Herniations—Considerations and Treatment Strategies” (DOI 10.1007/s00586-014-3210-5 by N.A. Quraishi et al.)

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Thank you very much for asking me to review this paper [1]. I was particularly interested that some surgeons chose to use spinal cord monitoring whilst others did not.

The results observed in the cohort of patients presented in this study confirm the generally accepted observation that myelopathy due to compression of the spinal cord usually responds very well to surgery which relieves that pressure. Therefore, in patients undergoing surgery to treat myelopathy, the objective is to relieve the pressure, either by removing the compressive lesion or less frequently, correcting a deformity. It is difficult to see how spinal cord monitoring would be helpful in changing the surgical strategy employed in these circumstances. If spinal cord monitoring raises an alarm whilst a thoracic disc is being removed, presumably the best course of action would be to achieve the objective of the operation and complete the decompression? Likewise, once the rostral and caudal parts of a deformed spine have been mobilised so that the deformity causing the myelopathy can be corrected, the response to any alert, which may be raised by monitoring is presumably to straighten the vertebral column?

In 2007 this Journal published a supplement focused on multimodal intraoperative monitoring (MIOM). The opinion of a “consensus group” agreed that, “MIOM can be recommended for the following spinal pathologies:

- corrections of spinal deformities with scoliosis greater than 45°,

- corrections of congenital spine anomalies,
- resections of intramedullary and extramedullary tumors and,
- extensive anterior and/or posterior decompressions in spinal stenosis in cervical, thoracic and lumbar spine causing myelopathies and functional disturbance of cauda equina and/or individual nerve roots” [2].

They considered that there was, “sufficient scientific evidence to propose the above recommendations, however, not enough to establish legally binding guidelines.”

There is a clear rationale for what should be done in response to an alarm raised by MIOM in the first 3 of these categories (stop doing what you are doing and/or reverse what you have done) as well as reasonably robust evidence to support its use. Even so, the mechanism by which correcting a scoliosis causes neurological deficit is not always clear. The fourth category is fundamentally different (and poorly defined). The aim of surgery in patients whose symptoms are a consequence of neural compression is to relieve pressure on the neural structures. Inability to achieve this goal will result in failure to improve their symptoms and possibly make their condition worse. In these circumstances, it remains unclear how signal changes from neurophysiological monitoring can be used to change the surgical objective and strategy.

Everyone will agree that it is important for us to constantly strive to improve surgical outcomes. However, the employment of neurophysiological monitoring without evidence of efficacy (or even harm) has significant resource implications and should be carefully considered.

Conflict of interest None.

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2. Sutter M et al (2007) Current opinions and recommendations on multimodal intraoperative monitoring during spine surgeries. *Eur Spine J* 16:232–237