Anaesthesia for spinal surgery in children

Editor—Soundarajan and Cunliffe have produced an admirable summary of the conditions requiring spinal surgery in children and the major anaesthetic considerations surrounding this type of surgery.1 Any review of such a challenging and diverse subject matter must, by necessity, give only cursory attention to certain aspects of anaesthetic care. The authors briefly describe the use of spinal cord monitoring towards the end of their review. We would like to elaborate on the issues surrounding monitoring of spinal cord function intraoperatively, as this is both of rapidly increasing importance in the field and of great impact on the anaesthetic technique. After the publication of guidelines in 1991,2 monitoring of spinal cord function has become the standard of care in scoliosis surgery and is increasingly utilized in other spinal surgeries. With the approval by regulatory bodies of appropriate stimulators, and the publication of workable guidelines, Tc motor evoked potentials (MEPs) are increasingly used in addition to somatosensory evoked potentials (SSEPs).3 This type of monitoring presents an additional challenge to the anaesthetist. In the majority of centres, the MEPs are recorded from the muscles, especially in scoliosis surgery, to avoid the need of placing electrodes on the spinal cord. This necessitates the entire anaesthetic management be tailored to the requirements of this monitor. The anaesthetic cannot include ongoing neuromuscular block, and particularly in children, reliable recordings of MEPs are best obtained in the absence of many of the halogenated agents. This makes a total intravenous anaesthesia (TIVA) approach utilizing propofol and a short-acting opioid infusion preferable.1,3

In our experience, in children in particular, MEPs recorded using EMG needle electrodes elicited with multi-pulse transcranial electrical stimulation are poorly recorded and reproducible if the mean arterial pressure is <60 mm Hg. There are benefits. When monitoring is taking place, the neurophysiology technician will frequently record EEG, allowing the anaesthetist to determine depth of anaesthesia with increased accuracy. This is important in the face of the significant impact that depth of anaesthesia has on spinal cord monitoring. Although burst suppression allows for easy recording of SSEPs, it can lead to difficulty in obtaining TcMEPs due to loss of the oscillatory activity in the motor cortex which is crucial for generation of TcMEPs. Preserving neural function, especially in children, is of critical importance. In many instances, scoliosis surgery is at least semi-elective yet presents a significant risk of neural damage. Appropriate and comprehensive neuromonitoring is therefore crucial and the anaesthetic monitoring considerations are of major importance to the safe completion of surgery. As can be clearly seen from this description, this is an area which requires experience and communication. As spinal surgery increasingly becomes a team activity with the involvement of the surgeon, anaesthetist, and neurophysiologist, it is important that we recognize that we may need to alter our choice of anaesthetic in order to provide for improved patient safety.6 We would like to thank Soundarajan and Cunliffe for drawing renewed attention to this important and developing area of paediatric anaesthetic care.

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Editor—We would like to thank Drs Norton and Cave for their comments on our article.1 As they quite rightly point out, it is difficult within the confines of a word limited review to sometimes put in as much information as you would like on a particular aspect of care. I hope we did stress the importance of spinal cord monitoring in patients undergoing this type of surgery, which is now a standard of care for these patients. We would also like to fully endorse the view that spinal cord monitoring is a team event which involves the neurophysiologist, the anaesthetist, and the surgeon. The choice of which type of monitoring to use has also increased, and we must choose the technique that will be most sensitive and accurate within the context of the surgery being performed.

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Surgical masks: evidence, image, and art

Editor—During a recent visit to London, I had a chance to visit an exhibition of Damien Hirst. Among the various works of art in this exhibition was a series of paintings called the Birth Paintings. In this series, which depict the birth of the artist’s son by Caesarean section, the artist confronts, as he puts it, ‘the intense joy and deep-set anxiety we can all feel in hospitals, where we are surrounded by both creation and decay’. In one of these large paintings, showing the operation in progress, with the surgeon, assistant, and nurse basked in dramatic light, in the left lower corner, sits a middle-aged gentleman who is busy scribbling. Besides being off-centre, this person is the only one who does not wear a surgical mask. After a minute, it occurred to me that this is the anaesthetist! Since where I trained and practice all personnel in the operating room is required to wear masks after the sterile trays are open, I thought that it is very unfortunate that the anaesthetist was caught embarrassingly ‘off-guard’ in this painting.

Later that day, I shared my impressions of this painting with some senior anaesthetists from the UK and elsewhere. To my great surprise, they have all said that ‘there is no evidence that wearing a mask decreases the incidence of infection’ and that, therefore, anaesthetists in the UK are not required to wear masks throughout the operation.

My first thought was ‘how much lack of evidence is needed to produce enough evidence to justify not wearing a mask’. I went through the literature on this topic and, in all fairness, found it to be inconclusive and controversial. El Mikatti and colleagues found that only about 35% of the responding UK anaesthetists wear masks regularly, and that anaesthetists rated their potential for transmitting or contributing to patient infection as rather low, even though, the article goes on to say, that a high proportion of anaesthetists continue to administer anaesthesia, despite suffering from various infections. In addition, some studies have definitely shown that surgical face masks are effective in reducing bacterial contamination caused by dispersal from the upper airway. Furthermore, a few studies that showed that wearing a surgical mask may not decrease the danger of transmitting infection have a very limited number of observations, and cannot be regarded as conclusive, in view of the fact that producing reliable ‘evidence’ when it comes to low incidence events is quite difficult. In view of this information, my question is why not err on the safe side when it comes to such a major change in our working practice? In the same vein, we could also say that there is no evidence that leaving the anaesthetized patient unattended for 3–5 min affects patient outcome.

Let me conclude by adding a comment about the possible effects of not wearing a mask on the anaesthetist’s public image. Anaesthetists worldwide have been preoccupied with their public image. This has always been a sore spot for us since many of our patients are unaware that anaesthetists are medically qualified. Many of these discussions have dealt with the impact of the anaesthetist’s appearance and attire. One concludes that the level of ignorance about anaesthesia has not changed significantly in recent years and that this may be as a result of the anaesthetist’s portrayal on television. The painting I was referring to is ‘art’ and not ‘television’; hence, it will probably be seen by not too many people. Nevertheless, to me at least, the damage to our image is done.

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