

monitoring that was not detected by SEPs. Disturbingly, the potential importance of this result is completely ignored in the discussion and conclusions.

One other patient had a transient SEP change that resolved spontaneously without EEG alteration. However, the unconvincing illustration shows only a single average below the 50% criterion, which might be explained by the random effects of noise evident in the traces shown.

Because carotid ischemia is usually widespread, both methods are very sensitive, but the situation may be different with more limited disturbances. Proper EEG provides the coverage required to demonstrate extensive or focal cortical ischemia.¹ Although deep subcortical lesions may not cause EEG alterations, this appears to be very rare with good EEG technique.^{1,2} Somatosensory evoked potentials detect subcortical or cortical somatosensory pathway lesions, but are anatomically limited to this specific system only. Therefore, it is physiologically inevitable that motor and other non-sensory neurologic compromise without SEP change will occur exactly as has been found for other surgeries and documented during endarterectomy.^{3,4} It may have even occurred in one of the patients of this study, although apparently unappreciated by the authors. Depending on the undisclosed details of the critical case discussed above, the results of this study could support the contention that the suboptimal EEG techniques used were inadequate or that endarterectomy monitoring should involve both modalities. They do not demonstrate superiority of either, and should not persuade practitioners to rely primarily on SEP monitoring.

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RESPONSE

Re: Comparison of Monitoring Techniques for Intraoperative Cerebral Ischemia.

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Can J Neurol Sci 2004;31(3):347-356.*

We agree that 16 channel EEG monitoring provides more widespread coverage of cortical function and it is conceivable that we may, with further experience, encounter a false negative SSEP in the face of a true positive EEG. The opposite was true in the present cohort and this, combined with the fact that we were unable to record EEG in a slightly higher proportion of patients (mainly due to low EEG amplitude after anesthetic induction in patients with previous strokes) led us to conclude that, in our hands, the SSEP was more reliable than EEG.

As we indicated in our discussion, the low intraoperative stroke rate in our series of cases renders our conclusions tentative and we would therefore certainly not attempt to persuade practitioners who are currently employing intraoperative EEG from continuing to do so. We would rather prefer to stimulate additional studies that directly compare monitoring methodologies in the hope that, ultimately, simplification will result. If this occurs, more centres are likely to practise routine intraoperative monitoring for cerebral ischemia with resulting improvement in patient safety.

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